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FRANKLIN MEDAL LECTURE

THE STORY OF "PHILOSOPHICAL HALL"[1]

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(*Read November 4, 1949*)

I

HISTORIC BUILDINGS

HISTORIC buildings have always held a prominent place in both cultural and political history. Adding atmosphere and significant expression to the story of the past, they speak a language quite as eloquent as do written documents. In some instances they rise conspicuously from the local to the higher levels of national and even international significance. Appreciation of this has varied greatly from time to time. In general, however, an instinctive feeling for the importance of historic sites and buildings has prevailed in every age from the building of the pyramids of Egypt to the determined efforts of war-stricken Europe to salvage the shattered re mains of its historic shrines. About the middle of the last century this feeling became very pronounced in intellectual and artistic circles, and gradually found expression in a widespread movement for conservation and restoration. Archaeologists, historians, architects, and engineers following the lead of the eminent French scholar, Viollet-le-Duc, developed rules and canons to govern the process, till there emerged, if not a new science, at least a new discipline. Historic survivals in the form of buildings and other shrines were heralded as important historical sources—concrete evidence of the continuity of history, interpreting the past to successive generations in terms young and old could understand.

In our country the movement, now closely associated with city planning, has grown rapidly in recent years. Under the impact of two world wars, the great depression of the thirties, and the challenge to our national heritage, it has assumed a national as well as a local character, and is today in full stride.[2] Through the Department of the

[1] The story of "Philosophical Hall" as here published has been expanded considerably to include important material which was of necessity omitted from the address on the occasion of the Society's re-occupation of its Hall after the reconstruction of 1948–1949. The name did not originate with the erection of the building which has now served as the home of the Society for 160 years. It appeared earlier in the advertisements of the fortnightly meetings, especially in the 1770's in connection with the Christ Church School on Second Street. Even in later years it was sometimes used to designate the particular quarters in the Hall reserved by the Society. In general, however, the building on Independence Square erected by the American Philosophical Society held in Philadelphia for Promoting Useful Knowledge became known as "Philosophical Hall," and it is in this sense that it is used in this study.

[2] Interest in historic buildings and sites which had long been rather sporadic and without direction in this country was greatly stimulated during the depression of the thirties by the superb work of the National Park Service in cooperation with the American Institute of Architects and the Library of Congress, and on a somewhat more popular and different level, by certain activities of the W.P.A. Attention was attracted to its national, as well as its local significance. Thousands of communities became somehow conscious of their local history and its relation with the history of the country as a whole. With World War II and the bombing of cities abroad, its universal importance also became evident. Impressed with this and the richness of our cultural heritage, President Roosevelt set up state commissions for the conservation of cultural resources. Through their efforts, state and local historical societies, the schools, and many private organizations were enlisted to coordinate their efforts, and an amazing awareness of the nation's cultural resources was awakened. For most of the period the writer served as Director of the Pennsylvania Comission for the Conservation of Cultural Resources, which had its headquarters in our Hall. At the close of the war, interest had become so broad that it was decided to take advantage of the momentum and carry on. Under the leadership of our State Historian, Dr. S. K. Stevens, and others, steps were taken to organize the state and local history organizations on a national basis, our Society making a substantial grant toward that end for a two-year period. The results have already exceeded the most sanguine expectations. The membership throughout the country has increased by leaps and bounds, while a new magazine, *American Heritage*, has been established to coordinate the interests of the many state and local history publications. Here in Philadelphia sentiment was thoroughly aroused by the conditions surrounding Independence Square, the nation's most historic area. The Independence Hall Association was organized, and largely through its efforts so ably directed by Judge Edwin O. Lewis, Indequendence Square and its buildings, including Philosophical Hall, were officially declared a national shrine.

FIG. 1. Philosophical Hall restored to its original design in 1949.

Interior, and the Advisory Board of the National Park Service, the federal government has been cooperating with state, municipal, and private efforts in the conservation and restoration of historic shrines. Outstanding among hundreds of such projects throughout the nation are Colonial Williamsburg; the historic sites, buildings, and streets in Boston; Old St. Augustine; and the large-scale restoration project in St. Louis by the federal and state governments at a cost of over forty million dollars.

Until the present decade official Philadelphia, although solicitous in the care of Independence Hall, remained unresponsive. The survey by the Philadelphia Chapter of the Institute of American Architects showing the extraordinary number of fine historic buildings still standing in Old Philadelphia went almost unnoticed. Only after the repeated and devoted efforts of individual citizens, civic and patriotic organizations has Philadelphia become really conscious not only of its obligations, but of its opportunities. Today we have in addition to a number of historic projects in the program of the City Planning Commission,[3] two major developments of an historic character, involving both conservation and restoration, one financed by the State, the other by the federal government. The story of these two projected improvements, *malls* as they are called, has been so widely discussed in the public press that comment here is unnecessary. Suffice it to say that the Independence National Historical Park, with which Philosophical Hall is so closely integrated, is being inaugurated at this very moment. The national government has appropriated the money, the President has appointed the advisory commission, and a staff of specialists from the National Park Service has set up its offices here in Old Philadelphia to direct the work.

It is, therefore, a matter of particular satisfaction to our Society that an important initial step in the process took place under its auspices when the Independence Hall Association was organized here in Philosophical Hall, and that the Society has sponsored the formation of the nationwide State and Local History Association. Further-

[3] See the *Report of the Mayor to the Citizens of Philadelphia for 1948.*

more, as the plans for the Independence National Historical Park began to mature, the Society promptly gave consideration to putting its own house in order.

The ungainly third story added to the Hall in 1890 not only destroyed its original character architecturally, but put it out of harmony with the other buildings of the Independence Hall group. The desirability of restoring Philosophical Hall to its eighteenth century appearance by removing the incongruous superstructure had been discussed before, but without results. In 1946 under the presidency of Thomas Sovereign Gates the Society voted to do this, and at the same time modernize and fireproof the Hall. This has now been done with eminent success. Philosophical Hall has been restored to its original exterior design, and the interior remodeled in accord with the best colonial tradition by our architect, Mr. Sydney Martin, working in close cooperation with the officers of the Society. The cost has mounted to well over $200,000, or about five times the amount it took to erect the third story superstructure fifty-nine years ago. Nevertheless, it has met with unanimous approval. Philosophical Hall not only is again in perfect harmony architecturally with the other fine old colonial buildings of our great historic Square, but its own Quaker-like simplicity and loveliness has been recaptured—an historic shrine in perfect keeping with the scholarly and scientific purposes of the Society (fig. 1).

II

FIRST STEPS TOWARD A PERMANENT HOME

For twenty years after the union in 1769 of two societies to form the American Philosophical Society held at Philadelphia for Promoting Useful Knowledge the new Society, like its parents, did not have a home of its own. Even after its incorporation under the Charter of March 15, 1780, and graduation from Pewter Platter Alley, it met here and there in Carpenters' Hall, at the College or University and later at Christ Church School on Second Street. On the other hand, the question of a permanent home appears to have been a matter of especial concern to the members from the very beginning. On May 20, 1769, less than five months after the merger, the Society ordered "that application be made to the Assembly for a lot of ground in the state house square, whereon to build a house to accommodate the Society." A committee was appointed "to draw up & present to the Assembly the petition for that purpose."[4]

Although the Committee was later continued, and the matter came up now and then during the next decade, it was not again vigorously advocated till 1783. An entry in the Minutes for July 19 of that year reads:

> It haveing been long in Contemplation of this Society to purchase a Lot in some convenient Part of the City for the Purpose of erecting a Hall for the reception of the Books, & natural Curiosities belonging to the Corporation, & as a Place of Meeting for the Members; & it being now mentioned that a convenient Lot may be purchased on reasonable Terms in Fifth Street near Arch Street. . . .
>
> On Motion, it was resolved that a Committee be appointed to confer with the Proprietors of the said Lot respecting the Purchase, & to know from them the lowest Price at which it may be had for ready money.—

The Committee was appointed and in February, 1784, it recommended

> that Measures be immediately taken for erecting a suitable building for the accommodation of the Society; and [the committee] are of the Opinion that if a Lot of Ground were purchased for the Purpose, it would not be difficult to raise by Subscription a Sum sufficient for compleating a convenient Building—at least they think it ought to be vigorously attempted without delay . . . and that as soon as £1000 shall be subscribed a Committee be appointed to plan a suitable Edefice to be laid before the Society for Approbation. . . .[5]

Accordingly, when the lot on Fifth Street near Arch belonging to Francis Hopkinson was purchased, Mr. Samuel Vaughan, Mr. Rittenhouse, and Mr. Hopkinson were elected "a Committee to consider of the most eligible means of providing the Society with a suitable Building."[6] Before anything was done, however, a radical change of attitude toward the lot on Fifth Street near Arch took place. A proposal to join with the Library Company in an appeal to the Assembly for two lots in State House Yard met with approval. At the meeting of March 19, the Committee reported that

> they had met with a Committee of the Directors of the Library Company of Philadelphia and had in conjunction with them, drawn up and presented to the

[4] Amer. Philos. Soc. Archives. Minutes of the American Philosophical Society . . . 20 May, 1769. At the same meeting the report on the preparations for the observations of the Transit of Venus was made.

[5] *Ibid.*, February 6, 1784.

[6] *Ibid.*, March 5, 1784.

General Assembly a joint Petition for two Lots of Ground on the East and West Sides of the State-House Square for the Purpose of erecting two suitable Buildings. . . .[7]

A copy of the joint petition was thereupon read, and a resolution passed that "this Society highly approve of the conduct of their Committee." Unfortunately, differences arose between the two organizations over which should get the lot on Fifth Street, Sixth Street being "too far west!" On December 17 Samuel Vaughan, who had been trying to adjust the difficulties, "reported that the Library Company having declined to join in the petition to the Assembly upon the terms proposed by this society the committee had, agreeably to the directions of the society, presented a petition in the name of the society alone." [8]

THE LOT ON INDEPENDENCE SQUARE

To the surprise of some, the Assembly, after referring the question to its Committee on Ways and Means before adjournment, took the matter up promptly when it reconvened, and by the Act of March 28, 1785, gave to the Society the lot of ground on which Philosophical Hall now stands and the right to erect a building. Section 2 of the Act reads:

Be it enacted and it is hereby enacted by the Representatives of the Freemen of the Commonwealth of Pennsylvania in General Assembly met, and by the Authority of the same, That a certain Lot or piece of ground being part of the State House Square situated on the West side of Fifth Street and beginning ninety six feet Southward from Chesnut Street and thence extending along Fifth Street aforesaid seventy feet South towards Walnut Street thence Westwardly on the State House square fifty feet, thence Northward in a line parallel to Fifth Street seventy feet and thence Eastward fifty feet to the place of Beginning, shall and hereby is given and granted to and vested in the American Philosophical Society held at Philadelphia for promoting useful knowledge, to have and to hold the said Lot of Ground to the said American Philosophical Society and their Successors for ever; for the purpose of erecting thereon a Hall, Library and such other buildings or apartments as the said Society may think necessary for their proper accommodation.[9]

The favorable action of the Assembly is quite remarkable when viewed in the light of its earlier resolutions on February 29, 1735–36, and again on February 17, 1762:

That no part of the said ground lying to the southward of the State House as it is now built be converted into or made use of for erecting any sort of buildings thereupon, but that the said ground shall be enclosed and remain a public open green and walks forever.

There were, therefore, special reasons for the somewhat precipitous rush to begin excavating for the cellar and the foundations, even though the campaign for funds had hardly started. A special meeting was called for April 1, 1785, at which it was agreed, that "a Subscription be opened immediately," and "that Mr. Vaughan and Mr. Magaw be a Committee For the Purpose of soliciting and procuring Subscriptions." The form of subscription as drawn was submitted to the Society on April 15 and "after receiving a few alterations, adopted." The text is found in a number of places in the Society's Archives.

BUILDING PHILOSOPHICAL HALL

At the meeting of April 1 it was also voted

that Edward Shippen, Samuel Powel, Francis Hopkinson, and Samuel Vaughan, Esquires, be a Committee to procure Stone, and other necessary Materials for laying the Foundatn. of the Building aforesaid.

In accordance with the practice of the times, the committee assumed direction, not only of drafting the plans, but of procuring supplies and looking after the construction. Working from books like Gibbs, Langley, and others based on Sir Christopher Wren, they gave us an American renaissance which, to quote our fellow member, Dr. Wertenbaker, "flowered from New England to Georgia and gave to Philadelphia the most remarkable group of civic buildings in colonial America, the most beautiful church structure and scores of handsome residences." [10]

What has just been said, explains the fact that no architect's plans for the Hall have been found, though the dimensions of the rooms, cellars and vaults appear in several places, as for example in the following entry for the Minutes of June 17, 1785:

The Plan of a Building for the use of the American Philosophical Society, to be erected on the Lot granted by the General Assembly, was delivered in by Mr. Vaughan, for the Society's consideration,—and approved of.

[7] *Ibid.*, March 19, 1784. The joint petition for two lots 40′ × 80′ on State House Yard was dated March 12th.

[8] *Ibid.*, December 17, 1784.

[9] Statutes at large of Pennsylvania MS. Act of March 28, 1785, Law Book **2**: 414.

[10] Wertenbaker, Thomas J., *The Golden Age of Colonial Culture*, 74, N. Y., N. Y. Univ. Press, 1942.

Dimensions of the Plan ——

Passage ——	12 Feet	by	47
Hall, or largest Room on the South side,	27 d°	by	47
Room on the N.E. side	27	by	23
Room on the N.W. side,	27	by	23
Height of the 1st Floor,	14 Feet		
Second floor,	10 d°		

—— Cellars to be 7 Feet high.
—— Vaults, under them, of equal height

Since the campaign for subscriptions proved somewhat disappointing, the Committee was given the option "to begin this Work immediately; or to defer it Some time longer;—as they may judge most expedient." Furthermore, as so often happens, plans had to be altered to conform to expediency and available funds. At the meeting of June 16, 1786, the question of the underground vaults was discussed, and it was

Resolved, as the building of Vaults, and Cellars thereon, would be very expensive, that Cellars only may be built; and to be raised two feet in the clear, above the State-house Garden, in order to have Windows to give Light, and a thorough Air thro' the Cellar: ——

The same meeting also ordered

that as the intended Hall will for the most part, be used after Sunset; that it may be built on the North side; and that the two Rooms may be built on the South Side, for the advantage of having more Light and air.

The Minutes of the meetings of the late summer and autumn of 1786 reveal clearly that matters were not progressing to the satisfaction of some. On October 20 the Committee on the Building reporting itself not "able to concur," was discharged, and Samuel Vaughan, Thomas Clifford, and Dr. Thomas Parke were empowered to "carry on the said building." To add to the general embarrassment, Mr. Hopkinson begged "leave to resign his Office of Treasurer," and asked that a committee be "appointed to examine his accounts." Fortunately, he was persuaded to reconsider, which he did, the Society ordering that "the committee for carrying on the Society's building in the State-house-square be appointed to collect the money subscribed or which may be subscribed for that purpose and pay the same into the hands of the Treasurer." [11]

[11] Minutes, November 17, 1786.

Strong appeals were again made to the public as is shown in the list of early subscribers printed in the issue of November 8, 1786 of the *Pennsylvania Journal and Weekly Advertiser* (fig. 2):

To the PUBLIC.

THE Legiſlature having granted to the American Philoſophical Society a lot of ground in the State Houſe ſquare (on which to erect a convenient building for the accommodation of the Society at their ſtated meetings, and for the reception of the aparatus, library and other valuable donations of which they are now, or may hereafter be poſſeſſed) the Committe appointed by the Society to carry on this building have, by the generous ſubſcriptions of a few citizens, been enabled to make ſome progreſs in this buſineſs; which is however neceſſarily defered till next ſpring, when they are determined to compleat the ſame, if poſſible; as the Society will be thereby enabled more effectually to proſecute the ends of their Inſtitution, namely, the promoting of Uſeful Knowledge, eſpecially as it reſpects the Agriculture, Manufactories, and Natural Hiſtory of North America.

Such Gentlemen as have not yet had an opportunity of ſubſcribing, will be particularly waited upon by the Committee*, when it is hoped they will add their names to the liſt of thoſe who have already ſubſcribed to this laudable undertaking, viz.

	£.	s.	d.
His Excellency Benjamin Franklin, Eſq.	100	0	0
Samuel Vaughan, Eſq.	50		
William Hamilton, Eſq.	25		
John Penn, junior, Eſq.	25		
Robert Morris, Eſq. being his pay as Member of Aſſembly for city of Philadelphia.	23	5	0
William Bingham, Eſq.	20		
Charles Tompſon, Eſq.	15		
Thomas Hutchins, Eſq. Geographer General,	10	10	0
Mr. John Vaughan	10		
Mr. George Fox	10		
Dr. John Morgan	7	10	0
John Ruſh, Eſq.	5		
Henry Hill, Eſq.	5		
Charles Biddle, Eſq.	5		
Mr. Robert Patterſon	5		
Samuel Heiſter, Eſq.	5		
Mr. Levi Hollingſworth	5		
David Rittenhouſe, Eſq.	5		
Mr. A. Ellicott, of Baltimore,	5		
Matthew Clarkſon Eſq.	5		
Mr. Benjamin Wyncoop	5		
Mr. John Dunlap	5		
Rev. Dr. John Ewing	5		
Dr. William White	5		
Dr. Samuel Magaw	5		
Dr. Henry Helmuth	5		
Mr. Robert Blackwell	5		
Mr. James Daviſon	3		
Hon. Thomas M'Kean	5		
William Auguſtus Atlee	5		
Geore Bryan	5		
Jacob Ruſh	5		
Francis Hopkinſon	5		
Samuel Miles	5		
Edward Shippen, Eſq.	5		
Plunket Fleeſon, Eſq.	5		
Wm. Bradford, Eſq. Attorney General	5		

FIG. 2. Form of subscription and partial list of subscribers published in the *Pennsylvania Journal*.

NEAR FAILURE

Matters didn't improve greatly during the winter and spring of 1787, and by midsummer of 1787, while the Constitutional Convention was meeting in Independence Hall, the Society was unable to meet its bills. In July a committee was appointed "to make inquiry concerning some proposals of the *Library Company*, relative to the Society's Lot, & the intended Hall, in the State-house Yard." A month later on August 17, the Committee reported

That they have had a Conference with the Board of Directors of the Library Company; and proposed to them, that the Company should either jointly finish & occupy the Building, on terms of equality and mutual convenience: or that the Company should take the Lot & Building altogether, and pay on demand a Sum equal to what hath been expended on the preparing and constructing of the Cellars; and also the value of the privilege of the Ground —— The latter proposition seemed to meet the inclinations of the Directors: but they desired meanwhile to deliberate a little farther; and to have the full ideas of their Constituents on the subject. It is probable they may be authorized to agree to the Proposal.

Signed, Sam. Magaw, Fra. Hopkinson, Jonathan Hoge, Thos. Ruston

Upon receiving the foregoing Report, Ordered, That the Company be informed, that the Society are not yet able to exhibit an exact account of the expence of the Cellars; neither are they yet prepared to come to any definitive agreement on the subject of the late Conference.

As the days passed, the Society's financial difficulties grew steadily worse till some of the members were ready to sell the Hall to the Library Company. At a stated meeting on September 7, 1787, it was moved

That a Committee be appointed to treat with the Directors of the Library Company concerning the disposing of the Society's Lot & Cellars; & that they be empowered to close the bargain of Transfer to said Directors, or Company, on the Terms already suggested to them.

But an amendment was moved and carried that the "matter be postponed" and "made the special Order of the Evening, on Friday the 14th Instant." The situation was obviously extremely critical.

FRANKLIN TO THE RESCUE

Fortunately Franklin had returned home in the summer of 1785. The records of the special meeting on Friday, September 14, if held, cannot be found. On the other hand, the moot question was made the special order of meeting for the evening of September 18. Franklin presided. Characteristically, however, he gave precedence to a scientific communication from the Professor of Astronomy at Glasgow on "the construction of Mr. Hirchel's [*sic*] forty Feet Telescope," and a letter from New Jersey on plaster chimneys with "mortar mixed with Salt." Only then did he bring up the question of the Hall. The action of the meeting on it is recorded in the following minute:

Sept.ber 18. 1787.

At the House of His Excellency the President.

The Phil. Society met, pursuant to special Appointment.

. . . Mr. Vaughan produced his account of the Subscriptions received towards the Society's Building; and of the Expenditures already made.——

On considering the Motion made by Dr. Hutchinson, at the meeting of the 7th of this inst. viz. "That a Committee be appointed to treat with the Directors of the Library Company concerning the disposing of the Society's Lot, &c"—which motion by postponement, was set over to the present evening;—being now brought forward, and argued upon; it was determined in the negative——

It was then

Resolved, That the said Committee are immediately to proceed; and with all convenient dispatch to have the Walls carried up, & covered in ——

The Society adjourned; to hold their next stated meeting, at the President's House, agreeably to his Invitation.

The defeatists were defeated! But as yet there was no formal assurance that the necessary funds were forthcoming. On the other hand, the confident tone of the resolution suggests that provisions had been made at least informally. There is evidence of at least one meeting during October, but we can only surmise what occurred. The Minutes are silent. Unfortunately Franklin's correspondence and memoirs do not help us either. His letters for these years, like his great speech before the Constitutional Convention on September 17, 1787, deal with larger issues, and the account of the addition to his own house for his sister, Jane Mecom, a year earlier was written in direct response to her inquiries. While the reference there to the "high cost of labor" may have been partly inspired by the difficulties over Philosophical Hall, the remark that "building is an Amusement" was hardly applicable. The silence of the memoirs is,

of course, explained by the fact that they do not go beyond the late fifties, else we might have had the same spirited account of these critical days in the story of Philosophical Hall, as those on other enterprises he either started or rescued from failure. The minutes of the meeting for November 2, 1787, tell the story in part. The pertinent paragraphs read:

> Whereas the President of this Society, his Excellency Benjn. Franklin, Esq; to enable this Body to complete the Building begun for their use, in the State-House Square, and which was lately at a stand, for want of sufficient Funds to prosecute the intentions of the Society;—has subscribed a second Hundred pounds in addition to his former Donation; and has also offered a Loan of what money may be requisite to raise & cover the Building, upon legal interest; it is therefore,
>
> RESOLVED,
>
> That the Thanks of the Society be returned to his Excellency Benjn. Franklin, Esq; President of this Society, for his generous additional contribution. . . .

A committee was appointed to wait on the President in order to confer with him on the form of the security to be offered. This was promptly done, and upon the report of the interview, it was

> RESOLVED
>
> That the Society give to his Excellency Benjn. Franklin, esq; a Bond for the money he may advance for carrying on, and covering their Building in the State-house Square—not exceeding Five hundred Pounds; . . .

TRIBUTE TO SAMUEL VAUGHAN

Meanwhile, the campaign for subscriptions was vigorously resumed under the direction of Samuel Vaughan and in recognition of his services it was resolved at the meeting on December 21,

> That the Society entertain a very high sense of the services rendered them by Samuel Vaughan Esq;—and that the Thanks of this Body be presented to that Gentleman, for his disinterested and successful attention to their Interests.

His Excellency the President did, accordingly, present the Society's thanks to Mr. Vaughan (fig. 3).[12]

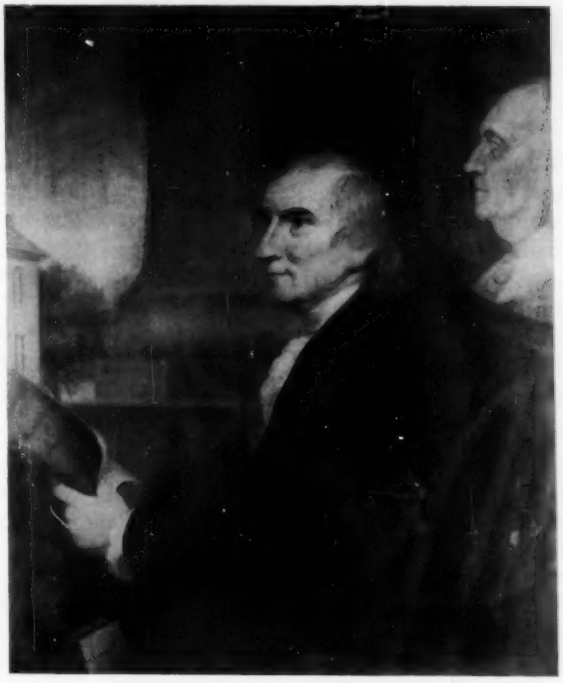

FIG. 3. Samuel Vaughan by Robert Edge Pine.

with its landscaping, Philosophical Hall which he did so much to build, and the titles of the volumes in the lower left-hand corner of the picture.

Samuel Vaughan of London, a successful Jamaica trader, came to America with part of his family in 1783. A friend of Franklin and fellow-member of Franklin's London Coffee House "Club of Honest Whigs," he received a cordial welcome in Philadelphia. Being a man of broad interests, he soon threw himself with much enthusiasm into the intellectual and social life of the city (*cp.* "The Philadelphia Sojourn of Samuel Vaughan" by Sarah P. Stetson in the *Pennsylvania Magazine of History and Biography*, Oct. 1949). In January of 1784 he was elected to the Philosophical Society, and for four years he gave much of his time and energy to its affairs. In a letter to Richard Price of August 2, 1786, Dr. Rush wrote: "He has been the principal cause of the resurrection of our Philosophical Society. He has even done more, he has laid the foundation of a philosophical *hall*, which will preserve his name and the name of his family among us for many, many years to come." *Mass. Hist. Soc. Proc.* 2nd ser. **17**: 349, 1903. While this is somewhat overdrawn, it is, as we have seen, correct to attribute the progress of the building of the Hall in large measure to his hard work and loyalty. Following his return from Jamaica where he had gone to look after his business interests, he left Philadelphia permanently for London in 1790. His bachelor son John, however, continued in Philadelphia and was for many years a secretary and the distinguished librarian of the Society. An older son, Benjamin, was a devoted friend of Franklin's, the first to publish his work in English (1779) and, as Lord Shelburne's personal representative, was intimately associated

[12] This portrait has had a curious history in that it was for years held to be a portrait of Francis Hopkinson by Charles Willson Peale. Some years ago Charles Henry Hart proved conclusively that it was the portrait of Samuel Vaughan by Robert Edge Pine, willed to the Society by his son John Vaughan. This is in thorough accord with the accessories in the painting—the bust of Franklin, the glimpse of Independence Square with a suggestion of the elms Vaughan had planted in connection

This formal tribute to Samuel Vaughan recalls his extraordinary service to the Society. His subscriptions and those of his friends toward the building of Philosophical Hall mounted up to over £700. With Rittenhouse and Francis Hopkinson he helped to initiate the plan and continued throughout its principal promoter. Additional proof that the tradition that the suggestion for the building had come from Franklin is wrong is found in several letters by Vaughan to Franklin, and a third by Francis Hopkinson to Thomas Jefferson.

On March 8, 1784, Vaughan wrote to Franklin of the plan for two lots on State House Square, one for the Society, the other for the Library Company of Philadelphia:

> . . . They wish to make an application to the Legislature for a grant of Ground on the S.E. & S.W. corners of the Statehouse yard for the erecting of two buildings one for the library, another for the Society, which are meant to be sufficiently ornamental not to interfere materially with the views of making a publick walk—Committees from the two bodies meet tomorrow to Confer on the proper mode of application—Many advantages will result from this arrangem[t]. if it meets with Success, some of them will necessity Strike you—The Society felt the necessity of a resting place so strongly that they a few meetings ago purchased a lot of M. Hopkinson near the observatory upon which they propose building, if the assembly reject the petition, and we flatter ourselves that Subscriptions will not be wanting to enable them to do it; should they succeed which is not improbable it may either be resold or be converted into a Botanical Garden.

In a short letter of May 3, wrongly dated 1783 instead of 1784, he repeats the statement about the two lots and suggests that, if Franklin shares his views, he communicate his sentiments which would carry great weight.[13] On the same day Francis Hopkinson wrote to Thomas Jefferson, concluding his letter with:

> I have scarce left Room to tell you that there is a Design on foot to erect two elegant Buildings on the State house Square, one for the philosophical Society the other for the City Library, to which is to be united the Loganian Library. I yesterday drew up the Petition to the House to grant us the Ground necessary for these Purposes.[14]

But if Franklin didn't initiate the project for a lot and "House," his staunch support after his return from France was obviously a determining factor in making possible its successful realization.

BUILDING COVERED. FIRST MEETING IN THE HALL, NOVEMBER 20, 1789

Franklin's loan of £500, his second subscription of £100, and a renewal drive to collect others even at the point of the law for those already pledged, at last furnished the funds "requisite to raise and cover the Building." During the next two years Franklin himself took a very active part in the affairs of the Society, presiding at most of its meetings. Meanwhile, work on completing the Hall proceeded steadily. At the stated meeting on August 21, 1789, at which Franklin was not present, it was resolved

> That the future meetings of the Society shall be in the Philosophical Hall; unless on occasions, when the President's health may allow him to be present: then, they shall be held in his house. Respecting this circumstance, the Secretary who advertises, is directed to make due inquiry some days before the times of meeting.

In editing the Minutes Peter Lesley inserted "[not]" after the word "may" in the third line, erroneously changing the meaning as appears below in the letter of September 17 addressed to Franklin by the secretary, R. Patterson.

There are no minutes for the two dates on which the Society would normally have met after August 21. The next recorded meeting was September 18. On the day preceding, the Secretary, acting in accordance with the instructions of August 21, wrote to Franklin as follows:

> Sir
>
> The Philosophical Society, at their last meeting, directed that one of their Secretaries should wait upon you previous to their next meeting to know whether it was probable that your state of health would permit you to attend, and that the meeting should be held at your house for that purpose.
>
> If this should not be the case, their Hall in fifth street being now in some degree prepared for their

with Franklin in the important peace negotiations in Passy. Their correspondence covers a wide range of subjects, and it is, therefore, very fitting that the Vaughan Family Papers are now being added to the manuscript collections of our Library.

[13] *Cp.* Amer. Philos. Soc. Franklin MSS. **31**: 106 and **28**: 75. The latter is dated May 3, 1783, which is obviously in error, since Vaughan had not yet arrived in Philadelphia, and the subject was not considered or acted upon by the Society until 1784.

[14] Francis Hopkinson to Jefferson, 12 Mch. 1784 (Lib. Congr., Jeff. Pap. **10**: 1647). I cite the original because I am indebted to Mr. Lyman H. Butterfield for drawing my attention to this paragraph, which for some reason is deleted in the letter as published in Hastings' *Francis Hopkinson.*

reception, they proposed to hold their meeting there, and directed me to advertise accordingly.

Your pleasure on this point, signified by the bearer, will much oblige —

Sir

Your obedient
humble Servant
R. Patterson
Sepr. 17

Honble Dr. Benjamin Franklin [15]

That Franklin's reply was favorable is attested by the advertisement in the *Pennsylvania Packet* of the meeting on September 18 to be held at Franklin's house. Other meetings on October 2, 16, and November 5, were also held there as advertised. On the thirteenth the officers and councilors met in the Hall, and, according to the minutes, the Society itself met there on November 21, the editor of the printed minutes adding "[First regular meeting of the Society in the New Building.]" If he had checked the date against the advertisement in the *Pennsylvania Packet,* he would have found the following in the issue of November 20:

A stated meeting of the American Philosophical Society will be held at their hall This Evening at six o'clock.[16]

Moreover, Friday, and not Saturday, was the day of the week on which the Society customarily met. It can therefore be accepted that the first regular meeting of the Society in its own Hall occurred on Friday, November 20, 1789.[17]

The exact day when the Society first met in Philosophical Hall is not of great significance. The important fact is that after four years Philosophical Hall was at last ready for occupancy. Moreover, in view of the discouraging efforts to build a suitable home and provide suitable quarters for its meetings and library, it seems a little surprising that so little notice was taken of its completion. Apart from the laconic heading "Philosophical Hall, November 21, 1789" for the minutes of the first meeting, there is no intimation of any special occasion. There was no celebration; no speeches were made; and no resolutions adopted. The fact that the interior of the Hall was still unfinished, and more particularly, respect and love for the President, now confined to his home by his last illness, doubtless account for this quiet and unheralded occupation of Philosophical Hall by the Society. It was left to their successors one hundred years later to commemorate the event. The ceremonies and addresses attended by many distinguished guests on that occasion—November 21, 1889—being in marked contrast to the first meeting of the Society in its Hall. On the other hand, despite the triumphant character of the later celebration, a note of sorrow pervaded the proceedings. The threat of being dispossessed by the authority of the Public Building Commission appointed by the State, was then still so serious that the conclusion of President Fraley's eloquent address quoted below took on somewhat the character of a swan song. But the crisis in the life of Philosophical Hall at the end of the first century of its existence was, after all, only one in a succession of very critical situations in its history.

III

CRISES IN THE STORY OF THE HALL SINCE 1789

The story of Philosophical Hall since 1789, like that of the years preceding, is marked by repeated periods of unrest and uncertainty. Sometimes this was caused by pressure from without; at others by conditions within the Society itself. On several occasions the Hall narrowly escaped passing into other hands; at other times, like its companion, the fine building of the Philadelphia Library Company across the street, it was actually in danger of demolition. During the first half-century of its existence, however, no major crisis occurred. In 1816 the City bought Independence Square from the State, and so became the custodian of its buildings and grounds, except Philosophical Hall. Nevertheless, it generously gave to the Society by a sort of gentlemen's agreement the use of the small triangular area on the south side of the Hall as a service entrance. The first in the

[15] Amer. Philos. Soc. Franklin MSS. **36**: 175.

[16] My attention was called to this discrepancy by Mrs. Hess to whom, and Mrs. Duncan, I am indebted for other valuable assistance.

[17] While the manuscript Minutes are the basic source for the story of the Hall and of the Society in general, even they must be used with care. The successive recording secretaries were by no means all adapted to the task. Inclination and circumstances were allowed to interfere with the prompt recording of the proceedings, and since the Minutes were not, as at a later period, read and approved at subsequent meetings, errors and omissions do occur. Hence, when important questions are involved they should be checked against other sources, like the reports of Committees and other archival materials of the Society, the records of the Assembly and of City Councils, and, for the sake of richness and human interest, the contemporary newspapers, diaries, memoirs, and correspondence of members and others. A systematic study of the Minutes from this standpoint is greatly needed and the plans for the work are being developed.

series of agitations to sell the Hall, and leave Independence Square, developed in the late thirties and early forties. A committee on a new site and building was appointed in 1834. Negotiations with the City, which was seeking accommodations for its rapidly expanding administrative and judicial departments, resulted in the ordinance of 1841 authorizing the purchase of the Hall by the municipality. The financial depression of 1838–1842, and disagreement over the price, led to the withdrawal of the offer. Unfortunately, the Society, in anticipation of a satisfactory accord, had already bought the Chinese Museum building on Ninth Street, even mortgaging its Library and cabinets for the purpose. Literally left "holding the bag," the Society's very existence was threatened, the Sheriff instituting foreclosure proceedings on behalf of the creditors. Once again, however, the lovalty of the members came to the rescue. The obligations were met, the debts paid, and the Hall and Library saved.

In the meantime, plans to join with the Athenaeum to erect a new building on another site were made. Toward this end, an Act of Assembly was obtained "for relief of the American Philosophical Society." The Act authorized the sale of the Society's building on Independence Square, for "the accommodation of Courts of Justice and officers connected therewith, or for public uses of the City and County of Philadelphia," nothing in the Act of Assembly granting the lot to the Society to the contrary notwithstanding. But the proposals to affiliate with the Athenaeum, and the sale of the Hall to the city again came to nought with the abandonment by the municipality of its plans. Instead, certain rooms were put at the disposal of the Mayor.

THE HALL SOLD TO THE UNITED STATES

In the fifties, the United States Government sought and obtained accommodations in the Hall for the use of the Federal Courts of the Eastern District of Pennsylvania. In a letter of May 18, 1854, addressed to Charles B. Trego, the Treasurer of the Society, United States Marshal, F. B. Wynkoop, wrote:

Dear Sir:

I desire to rent a portion of the building now occupied by your association for the purpose of accommodating the wants of the United States Courts.

That portion of the building which we will require is the ground and 2nd floor, now occupied as offices and used by the Mayor of the city as his reception room. . . .[18]

Two years later in 1856, the Government offered to buy the Hall and lot outright for $78,000. A formal agreement of sale was drawn up, Congress voted the money, the State approved by legislative action, and the Society actually tendered the conveyance.[19] But again fate interfered. The Attorney General refused to consummate the sale because of the limitations on the use of the property imposed by the Act of 1784 giving the lot to the Society. This created a curious dilemma in which the United States Government had obtained a property which it refused to accept, despite the fact that the highest authorities had officially endorsed the transaction. The impasse gave rise to an extraordinary situation. Aroused by the plan of the federal government to use Philosophical Hall for the courts and build a new post office in the Old Philadelphia area, a wave of opposition

[18] Amer. Philos. Soc. Archives.

[19] Amer. Philos. Soc. Archives. Copy of the Articles signed and sealed with seal of the Secretary of the Interior.

Philadelphia Exchange, May 17th, 1859. 7

No. 9.

EXTRA VALUABLE REAL ESTATE

BY ORDER OF

THE UNITED STATES.

PROPERTY, INDEPENDENCE SQUARE,

Fifth Street South of Chesnut,

Formerly owned and occupied by the

AMERICAN PHILOSOPHICAL SOCIETY.

Opposite the Philadelphia Library.

All that valuable lot of ground and the brick building thereon erected, situate on the west side of Fifth street, 96 feet south of Chesnut street; containing in front on Fifth street 70 feet, and extending in depth westwardly of that width on Independence Square 50 feet, being the same property which the Philosophical Society granted and conveyed to the United States, to be used for the purposes and business of courts of justice and offices and officers connected therewith.

A copy of the deed of conveyance, &c., may be seen at the Auction Rooms, south Fourth street.

No. 10.

BY ORDER OF THE UNITED STATES.

The Elegant Marble Edifice,

FORMERLY THE

BANK of PENNSYLVANIA,

And Lot of Ground, having Four Fronts, viz:

On Second St., on Dock St. opposite the Ex-

FIG. 4. Advertisement of sale of Philosophical Hall by the United States.

developed. According to an editorial in *The Morning Pennsylvanian* for May 18, 1859, more than 60,000 persons petitioned Washington to abandon the plan, sell Philosophical Hall and the Pennsylvania Bank, which had also been bought by the government, to the City, and use the money to build a post office and a new court house "further up town." Authorities in Washington were agreeable. Philosophical Hall and the Bank were placed in the hands of Thomas & Sons, auctioneers and were advertised for public sale (fig. 4) on May 17, 1859. On its part, City Councils passed an ordinance empowering the Mayor to bid up to $78,000 for the Hall.[20] In accordance with this mandate, the Mayor attended the auction at the Merchants' Exchange on the evening of May 17, but refused to bid, despite the auctioneer's protracted efforts. The hints of the editor of the journal just cited, that there was collusion between the Mayor and "the sharp gentlemen of the Philosophical Society" do not concern us. What is important is the fact that there was no sale, and the ownership of Philosophical Hall again lay between the United States and the Society. Since the former didn't want it, and the Society naturally paid no attention to the gratuitous advice of the editor to "give it to the City," the Hall remained in its possession.

PLANS FOR NEW CITY HALL ON INDEPENDENCE SQUARE

During the next decade the City finding itself more and more in need of accommodations for its courts, again made overtures for the purchase of Philosophical Hall. An ordinance of 1863, authorizing the lease of the first floor and basement at an annual rental of $3,000 carried the *proviso* that the American Philosophical Society agreed to sell its Hall to the City for a sum not exceeding $78,000 at any time within a period of five years. Expecting the City to exercise its option, the Society on its part secured an option for the purchase at $16,000 on the Butt Doble Stables on South Penn Square. But the City again withdrew from its proposal, and the Society surrendered its right to the Penn Square lot, which was later appraised at over a million dollars.

In the meantime the population of Philadelphia had grown from 54,000 in 1790, when the City Hall and Congress Hall on the Square were large enough to accommodate the administration and courts to 674,000 in 1870, and to 1,046,964 in 1890. Overcrowding had become intolerable. New municipal buildings were absolutely necessary. Moreover, since the old ones were on Independence Square, City Council seemed to assume that the Square was the logical site for the new buildings. Hence the extraordinary ordinance of 1868. On December 31 of that year Select and Common Councils passed an ordinance[21] which appointed

> Commissioners for the erection of Public Buildings for the accommodation of the Courts and all the City and County offices . . . that the said buildings shall be erected on Independence Square [and,] that upon completion of the buildings herein authorized to be erected, all the present buildings upon Independence Square, with the exception of Independence Hall, shall be taken down and removed by the said Commissioners.

FIG. 5. Philadelphia's City Hall on Center Square.

One shudders to think of the crushing weight of Philadelphia's vast City Hall on this historic Square, and its transformation into the rialto of Philadelphia's city politics (fig. 5). Fortunately the proposed desecration aroused public opinion to the point of action. A veritable furor of opposition developed, not only because of the threat to Independence Square, but because population and business had already moved westward, and the preponderant element was anxious to have the public buildings up-town. Appeal was made to the Legislature at Harrisburg, and the State intervened. On March 30, 1870, an act was passed

[20] Ordinances and joint resolutions of the Select and Common Councils . . . from January 1 to December 31, Philadelphia 1859, p. 210–211.

[21] *Ordinances and Joint Resolutions* of the City of Philadelphia from January 1st to December 31, 1868, 571–573, Phila., 1869.

setting up a special commission with extraordinary powers for "the erection of the public buildings" in Philadelphia, and

> to locate the said buildings in either Washington square or Penn square as may be determined by a vote of the legally qualified voters . . . at the next general election in October . . . and provided further that . . . upon the completion of a sufficient portion of said buildings to accommodate the courts and municipal offices, the buildings now occupied by them respectively, shall be vacated and removed, and upon the entire completion of the new buildings, *all the present buildings on Independence square, except Independence Hall, shall be removed*,[22] the ground placed in good condition by said Commission, as part of their duty under this act, the expense of which shall be paid out of their general fund provided by this act; and thereupon the said Independence square shall be and remain a public walk and green forever.[23]

The mandate to remove all the buildings on Independence Square, of course, included Philosophical Hall, and for the next two decades the threat hung like the sword of Democles over its deliberations. Moreover the fact that the highest authorities in the State had ordered the removal of the three companion buildings to Independence Hall seems to have drawn attention to the private ownership of Philosophical Hall. This appears repeatedly in the hostility of part of the public press in the late eighties and early nineties. A rather mild editorial in the *Public Ledger* of November 21, 1889, reads:

> ANCIENT AND HONORABLE
>
> The Hall which in its external architecture and general dinginess of appearance resembles the City and County buildings on the Chestnut Street corners of the Square, is generally understood to be a city building. Very few . . . know that it is occupied in any other way than to furnish rooms for the judges, jurors, suitors, witnesses and officers for the Court of Common Pleas Number 1.

On its part the Society seemed to accept the necessity of removal. In his address on the occasion of the hundredth anniversary of the occupation of Philosophical Hall President Fraley speaking with deep emotion said:

> I feel embarrassed when I have to talk of our parting with our ancient home. It is associated in my mind with so much pleasure, with so much instruction, that perhaps I ought to hope that I may not live to see the Society part with it. But there are considerations connected with this subject which I think ought to weigh with the members of the Society, when they consider the vast amount of precious treasures that we have accumulated here in the shape of our library, our collections, our manuscripts, our portraits, and so many things of which all feel pride in the possession.[24]

Philosophical Hall with Congress Hall and City Hall was set apart for demolition, it being supposed, as President Fraley expressed it with rather mild sarcasm, that Independence Hall "would be sufficient monument to perpetuate all the patriotic thoughts that cluster around the City of Philadelphia." Strange as it may seem, however, his anxiety even at the time was no longer necessary. The public and the legislature had lost interest, and the Society proceeded to meet the need for space in a new and surprising manner.

THE FOLLY OF THE THIRD STORY

Finding its Hall increasingly inadequate and overcrowded, the Society appointed a special committee, called the "Committee on Extended Accommodations," and on its recommendation voted to add a third story to accommodate its library. To do this, the walls had to be strengthened and iron

FIG. 6. The third story, 1890–1949.

pillars installed in the rooms on the first and second floors to carry the extra load. The entire improvements including the new book cases in the large upper library room cost the sum of $41,449.72.

The costly addition of the "dungeon-like" superstructure (fig. 6) to the exterior violated all the

[22] Italics are mine.

[23] Laws of the General Assembly of the State of Pennsylvania passed at the Session of 1870. No. 1404. See volume of Laws of 1871, Appendix, pp. 1548–1550.

[24] *Public Ledger*, Nov. 22, 1889. Also *Proc. Amer. Philos. Soc.* **27**: 6, 1889.

canons of conservation and reconstruction, destroying completely the original harmony of the buildings on the Square.[25] Moreover, to add insult to injury, the Society publicly solicited tenants, drawing attention to the attractiveness of the rooms since the remodeling, and offering further alterations on long-term contracts. This again raised the question of profits and competition by a tax-exempt institution. Hostility flared up once more, and a strong movement to dislodge the Society from the Square got under way. An ordinance to that effect was introduced in City Council with the vigorous support of a number of civic and patriotic organizations, private individuals, and the city press.[26] But again wiser counsel prevailed, and the Society's occupation of the Hall was not again officially challenged. Instead, despite President Fraley's fears, it continued to occupy Philosophical Hall with a satisfied feeling that the building with the added story was now adequate for its needs.

The fallacy of this assumption was not, however, long in appearing. In less than two decades, evidences of overcrowding again appeared (fig. 7). This, coupled with worries over finances and other conditions, led to a prolonged agitation within the Society itself to abandon the Hall.

[25] For a more detailed account see Lingelbach, W. E., Old Philadelphia: redevelopment and conservation, *Proc. Amer. Philos. Soc.* **93** (2) : 188–189, 1949.

[26] *Cp.* editorials and articles in the newspapers—*Telegraph, Record,* and *Bulletin* in the summer of 1891, and the Records of City Council for the nineties.

FIG. 7. The overcrowded library quarters several decades after the addition of the third story.

EXCHANGE OF HALL FOR LOT ON THE PARKWAY

Troubled by the steady increase of its library and cabinets, and the consequent overcrowding of its own quarters, a decided change occurred in the attitude of some of the officers and members of the Society toward the Hall following the first decade of the twentieth century. Equally, if not more important was the drastic decline in rentals caused by the exodus of business and financial institutions from the downtown area. To these very substantial considerations was added still another, in the attractions of the new Franklin Parkway to which the city authorities tried earnestly to bring as many of the learned and cultural institutions as possible. The prospects had a strong appeal for many members of the Society, the more so because it was expected that the State Legislature would make a generous contribution. The two hundredth anniversary (1906) of Franklin's birth furnished a favorable occasion. An application was made to the Legislature for $350,000. Although received favorably by the Senate, the House refused to approve the proposal. Instead a modest appropriation of $35,000 which Governor Pennypacker cut to $20,000 was voted to celebrate the Bicentenary.[27]

Nevertheless the agitation continued. A committee appointed to study the question strongly recommended removal to the Parkway. In a printed circular of May 9, 1911, signed by sixty members, calling for a special meeting of the Society to consider the matter, vigorous arguments in favor of the proposals were advanced. Denouncing sentimentality in a matter that offered such alluring material advantages, it pointed out that all other venerable institutions, save the Athenaeum, had moved westward; that the American Philosophical Society could not afford again to let opportunity pass it by—"to neglect this chance," it declared, "is to throw away a treasure. Three times did the Sibyl tender leaves of wisdom, and it was wise to act, even though tardily."[28] The minutes of the meeting of May 10, at which the report was adopted show fifty-seven yeas and only seven nays. On the other hand, it should be noted that it represented the local rather than

[27] It was in response to this celebration of the two hundredth anniversary of Franklin's birth that the Federal Government appropriated $5,000 to enable the Secretary of State to have a medal struck to commemorate the event, a single impression in gold to be presented on behalf of the President of the United States to the Representative of France, and two hundred in bronze for other purposes.

[28] Printed call for "the special meeting on Wednesday evening, May 10th," 1911.

FIG. 8. The proposed palace on the Parkway.

the general membership, the latter, at this period of the Society's history, rarely attending special meetings. However, in accordance with this resolution, an agreement was entered into on November 11, 1911, with the City to exchange Philosophical Hall for a lot on the Parkway in the vicinity of Logan Square.[29]

Efforts to raise a building fund were again made. As on an earlier occasion, they failed, and for some years no progress was made. In the late twenties, however, a concerted and altogether extraordinary campaign proved more successful. In addition to the usual publicity on such occasions, two special publications were issued; one, an attractive folio

[29] Office of the Recorder of Deeds. Deed book, J. M. H. No. 604, p. 148.

FIG. 9. Independence Hall and the crowded area to the north and east with Philosophical Hall, restored to its original design, in the right foreground.

volume entitled *When Aristotle Comes Again* (fig. 8), the other a smaller volume with the equally intriguing title, *Mankind Advancing, A Message of Progress*. As examples of effective promotion by a learned and scientific society, they are remarkable. The names of ranking scientists and scholars are found in the list of contributors to the Aristotle volume. In fairness to the scholars, however, it should be noted that most of them had in mind contributions for a new Franklin House without apparently realizing the significance of removal from Independence Square. Many of the finest statements, therefore, stress the value and importance of the opportunities for cooperative efforts and achievements in science and learning afforded by the Society, rather than the removal so strenuously advocated by some of the officers.

In the introduction and in the campaign generally, however, much emphasis was laid on the inadequacy of Philosophical Hall and the fire-hazards, not only because of the old and defective interior appointments, but because of the proximity of other buildings in the neighborhood (fig. 9). Nearly a million dollars was subscribed. While reasonably large, this was obviously inadequate for so large an undertaking. But the enthusiasts for the project were in command, and for a time it looked as though the Society would voluntarily abandon its historic home for a very questionable venture, without adequate endowment in a palace on the Parkway. Fortunately opposition to the plan was becoming quite pronounced when the problem of financing the Society was happily solved.

CONTRACT FOR EXCHANGE OF HALL CANCELLED

In 1932 the Society received nearly four million dollars bequeathed to it by its late member, Dr. Richard A. F. Penrose, Jr., of Philadelphia (fig. 10). Added to other funds, it completely eliminated all financial reasons for removal from Independence Square. Temporary quarters were found for the Library in the old home of the Philadelphia Stock Exchange in the Drexel Building in 1934, and at its Annual Meeting in 1936, the Society by a unanimous vote instructed its officers to seek the annulment of "the agreement or contract between the City of Philadelphia and the Society, dated November 24, 1911." On their part, the Mayor and City Councils were agreeable. The contract was annulled and the Society's title to its lot and Hall on Independence Square was

FIG. 10. Richard A. F. Penrose, Jr., scientist and benefactor.

again officially confirmed by an Ordinance of March 30, 1936. After reciting the contractual agreements between the city and the Society, and the Ordinances of 1911 and 1933, it says:

> *And Whereas*, It is the desire of both parties to the said contract of November 24, 1911, to withdraw from the negotiations and contractual duties, rights and obligations therein more fully described, to cancel and annul the said contract and to repeal the enabling legislation above described; now therefore. . . .

The Mayor is then empowered to implement the cancellation provided in the Ordinance, and the City Solicitor is ordered to cooperate in the execution thereof and in having the proper record made of the matter in the Office of the Recorder of Deeds.

> Approved the thirtieth day of March, A.D. 1936.
> S. Davis Wilson,
> Mayor of Philadelphia [30]

After this extraordinary ending to the campaign, the question of the subscriptions which had been made toward the Franklin House on the Parkway seemed at first thought to present a serious di-

[30] Ordinances of the City of Philadelphia from January 1 to December 31, 1936, and opinions of the City Solicitor, Philadelphia, 1937, pp. 105–107.

lemma. To clarify the situation, steps were immediately taken to ascertain the wishes of the individual subscribers as to the disposition of their contributions to the fund for the building on the Parkway. Practically all agreed to have their pledges transferred to the general funds of the Society.

Important as the final outcome of this last crisis was for the future of the Society, it also had considerable influence in the promotion of the great civic improvements soon to be inaugurated in the area of Independence Square, and now in process of realization. This expression on the part of the membership at large of loyalty to, and appreciation of, old traditions and environment was properly regarded as a tribute to the foresight of the Founders who in the beginning established the close association of Philosophical Hall—symbol of science and learning—with Independence Square, the nation's foremost shrine dedicated to liberty and patriotism.

IV

RENTALS AND SUCCESSIVE TENANTS

Quite early in the planning of the Hall proposals were made for renting the parts of the building not required for the use of the Society. Since nothing was said in the Act of March 28, 1785 about leasing the building, or parts of it, the Society petitioned the Assembly for the right to do so. This was readily granted by the supplementary act of August 14, 1786, the pertinent sections of which read:

> . . . Be it therefore enacted. . . . That the American Philosophical Society held at Philadelphia, for promoting of useful knowledge, shall be and they are hereby vested with full and sufficient power and Authority to let, or lease out, such Vaults, or Cellars as they may think proper to make under the Building to be by them erected on the Lot aforesaid, and shall have like power and Authority to let or lease any other parts of said Building for such purposes as may have affinity with the design of their Institution and for no other —
>
> . . . that the Issues, or profits arising from such parts of the Building shall be applied to the purposes for which the said Society was Originally instituted, and to no other, anything in the Act to which this is a Supplement to the Contrary notwithstanding.[31]

In accordance with the provisions of this Act, tenants were selected with considerable care. An application from the Masons was rejected as not sufficiently in "affinity with the design" of the Society. On the other hand, John Vaughan, for many years librarian, in 1787 rented the cellars for "the storage of wines and licquors." Until the second decade of the present century, rents and dues were the principal source of income, the presence of successive tenants, usually of a quite distinguished character, making the story of Philosophical Hall both more complicated and more colorful.

The University of Pennsylvania was the second successful applicant for space. In 1789 it obtained a lease for five years of Philosophical Hall, except for the two south rooms and the cellars for a rental of £85 a year, on condition that it furnish materials to complete such parts of the interior as was necessary, the cost to be deducted from the rent. By special agreement with the Assembly the Liberty Bell proclaimed not "liberty through all the land, unto all the inhabitants thereof," but the call to classes beginning at six in the morning for eager, if sleepy, students. In 1791 the two south rooms on the second floor were ordered to be finished, and later occupied by the Society and other organiza-

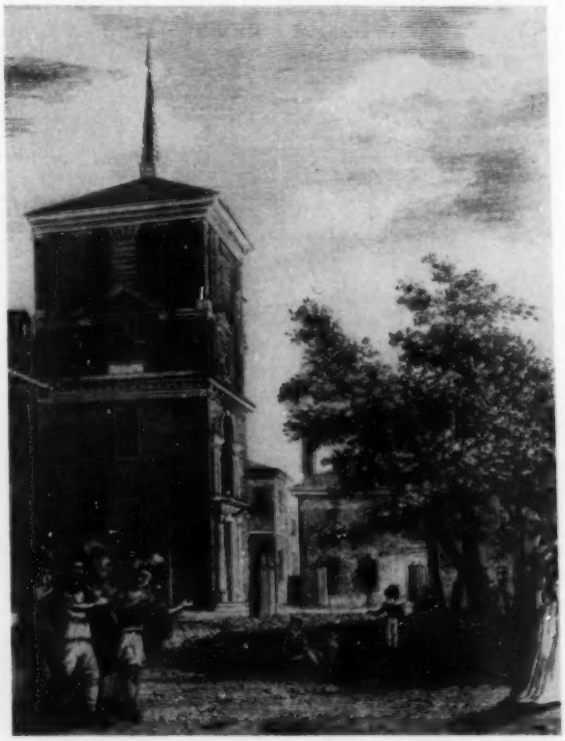

FIG. 11. Philosophical Hall in the background during its occupancy by Peale's Museum. Engraving by Birch (1799).

[31] Statutes at large of Pennsylvania from 1682 to 1801, compiled . . . by James T. Mitchell and Henry Flanders, 12 (1785–1787): 198–199, Harrisburg, 1906.

tions for their weekly or monthly meetings. Moreau de St. Méry reports that the College of Physicians met in the Hall of the Society every Wednesday evening and on special occasions. One of these occasions during the Yellow Fever epidemic of 1793, described by Dr. Powell, in his excellent book, *Bring Out Your Dead,* is of especial significance:

> On Sunday afternoon, trudging through the fury of the northeast storm, Dr. Hutchinson made his way to State House Yard. He entered the little building of the American Philosophical Society and climbed up the stairs to the chamber of the College of Physicians. The Fellows were gathering. It was an extraordinary thing, this special meeting the Mayor had requested. It was the first time the city had ever asked the Fellows a sheerly medical question. Indeed, it was the first time in American history any organized medical society had been appealed to by a government, and the Fellows were sensible of their responsibilities. The city expected leadership . . . the best of medical science could give.[32]

PEALE'S MUSEUM AND OTHER TENANTS

Upon the expiration of the University's lease, the Society raised the rent and, according to the record, found a more "desirable tenant" in Charles Willson Peale and his Museum (fig. 11). For the next fifteen years the Hall witnessed the animated domestic and intensely interesting professional life of this remarkable man—artist, educator, and inventor, a close friend of Jefferson and of all liberals. His large family and famous museum crowded the Hall beyond capacity, and a section of a part of State House Square was leased to accommodate the constantly increasing specimens and menagerie of native animals. Of passing interest is the fact that of his two sons born in Philosophical Hall, the younger, Franklin, was formally named by the Society. Apparently the father, hard put to it to find another appropriate name to add to Rembrandt, Titian, Rubens, and Raphaelle, proposed such an impossible name that the mother, being of the New York DePeysters and strongly attached to family names, objected vigorously. The matter was submitted to the Society which resolved that the boy should be named "Franklin." This was, of course, only an interesting incident in the busy life of Philosophical Hall which housed America's earliest successful museum from 1794 to 1811 (fig. 12). The first insurance policy on the building was taken out on May 7, 1794, pos-

[32] Powell, J. H., *Bring out your dead,* 30, Phila., Univ. of Penna. Press, 1949.

FIG. 12. Staircase portrait by Charles Willson Peale of Titian and Raphaelle Peale. Courtesy of the Philadelphia Museum of Art. The painting was used, writes Charles Coleman Sellers in his life of Charles Willson Peale (*Mem. Amer. Philos. Soc.* **23** (2): 71–72, 1947), to fill "an unused door frame in the Museum with a real step built out below to add to the illusion and it is said that President Washington invited to view some Indian figures in costume had been taken in by the hoax, courteously bowing as he passed the picture."

sibly because of the increased risk. Lightning rods had been put up in 1791. Whether this was done out of respect for Franklin, or belief in their efficacy, doesn't appear in the record. Some years before, the Society seriously debated the question: "May we place Rods on our Houses to save them from Lightning without being guilty of Presumption"?

After Peale moved the museum to Independence Hall in 1811, other tenants gradually secured accommodations in different parts of the building. Just what the conditions of tenancy were, or what parts of the Hall each occupied is not important. The following letter by John Vaughan, acquired by the library since this study was begun, is very suggestive on this score:

Dr. Thomas Parke
V.P. of the College of Physicians
Philad April 6, 1818

Dr. Sir

The American Philosophical Society, having been applied to by the Agricultural Society to be allowed to hold their meetings monthly on such days as the College do not meet, are disposed to make the arrangement with them—The Athenaeum have also applied to hold their monthly meetings so as not to interfere with the College—Will you please to lay this before the College— . . . That the necessary arrangements may be made by the A.P.S. with the other Societies.

I remain with respect
Your obt Servt.
Jn. Vaughan.
Libn of Am. Ph. Socy

Vaughan himself had bachelor apartments in the Hall, and the well-known painter, Thomas Sully, advertised his studio and gallery from there (fig. 13).[33]

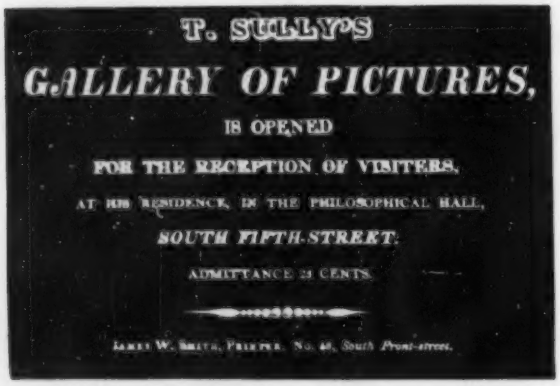
T. SULLY'S
GALLERY OF PICTURES,
IS OPENED
FOR THE RECEPTION OF VISITERS,
AT HIS RESIDENCE, IN THE PHILOSOPHICAL HALL,
SOUTH FIFTH-STREET.
ADMITTANCE 25 CENTS.
JAMES W. SMITH, PRINTER, No. 46, South Front-street.

FIG. 13. Thomas Sully's advertisement of gallery in Philosophical Hall.

THE CITY AND THE FEDERAL COURTS AS TENANTS

Mention has been made above of the use by the City of certain parts of the first floor and the basement for the Mayor's reception rooms in the late forties of the last century; to the occupation of the same quarters by the United States District Court for Eastern Pennsylvania; and the return of the City as a tenant in 1873 for the accommodation of the Court of Common Pleas No. 1. Having completely renovated the building and added the third story to accommodate the Library, the Society terminated the City's lease in 1891, and made the special appeal for new tenants referred to above.

With the Stock Exchange directly across the street in the Drexel Building, the new Bourse less than a square to the north, and the imposing solidity of numerous late Victorian bank and insurance company buildings, the area was entering the last period of prosperity as the city's financial center. Prospects for profitable rentals were excellent. The attractive character of the new quarters in the Hall was conspicuously advertised, and in the decades that followed investment and insurance brokers and others paid rental in excess of $5,000 annually.

RENTS DECLINE AS BUSINESS LEAVES OLD PHILADELPHIA

Toward the end of the period, however, the removal of the Stock Exchange to other quarters, the competition of the new Bourse Building with its more than four hundred offices, and the increasing exodus to the uptown area led to a drastic falling off in the rentals. In 1913 the Committee on Hall reported:

> The changes incident to the removal of the Stock Exchange have affected the renting of the offices most unfavorably. The entire first floor is vacant, and so far even very decided concessions in the amount of rental asked, has failed to attract tenants.[34]

By the end of 1915 conditions were almost desperate: "only one of the four offices in the building is rented, and although every effort has been made it seems impossible to get tenants for the others at any rental whatsoever."[35] Although conditions be-

[33] I am indebted to Mr. C. C. Sellers for a copy of the advertisement by Sully, the original of which is at the Academy of Fine Arts in Philadelphia.

[34] Report of the Committee on Hall, December 1, 1913.

[35] *Ibid.*, December 3, 1915.

came somewhat better later, the improvement was not sufficient to overcome the financial stringency which became a major cause for the campaign to exchange the Hall for a lot on the Parkway. From this dilemma the Society was finally rescued by the generous bequest of Dr. Penrose. The rental policy could now be discontinued. In 1934 all leases were terminated, and the Society for the first time took over all of Philosophical Hall for its own purposes.

V

MORE THAN BRICKS AND MORTAR

FIG. 14.

Buildings like Philosophical Hall, and those to which it is companion on this historic Square, are much more than bricks and mortar, no matter how successfully these may have been translated into beautiful structures. They are what they are, and they speak the language they speak, because of the events, the men, and the ideas that have been associated with them. As for Philosophical Hall with its fine new-old look within and without (fig. 1), more than incidental notice should be made of the very successful remodeling of the interior so completely in accord with the best colonial tradition. The difficult problem of the steep ascent of the stairs opposite the Fifth Street entrance caused by the city's demand, when the Hall was under construction, that the steps be brought from the sidewalk into the interior of the Hall, has been very successfully handled. An attractive marble stairway quite original in design; the semicircular treatment of the wall on either side of the doorway to conceal the dumbwaiter shaft and unsightly pipes; and the introduction of a five-point depressed arch adding width and dignity, have together greatly reduced what used to be an excessively high and angular approach to the main hall. It now has, not only an attractiveness all its own, but is closely integrated with the rest of the interior into a harmonious whole.

PORTRAITS AND MEMORABILIA WITH ASSOCIATIONS

But while this and the remodeling of the rest of the interior has been done with a sympathetic feeling for the spirit of colonial building, it is the portraits, memorabilia, and archives that create the atmosphere which gives it warmth and life. Hence brief comments on some of the more outstanding features of this character as they appear in the Hall today is necessary. This is all the more so because of the present effective distribution, for there is much more of purpose and motivation in the new arrangements than at first appears. The main principle was recognized in the Lecture Room after it was remodeled by our late fellow member, Dr. Paul Cret. The well-known thumb portrait of Franklin by Charles Willson Peale after Martin is appropriately in the place of honor over the chair of the presiding officer (fig. 14). Its prestige is greatly enhanced by the portrait of Washington by Gilbert Stuart on the right and that of Jefferson by Thomas Sully on the left. Like so many of the others, they have an especial association with the Hall and the Society.

FIG. 15.

The three original Martin portraits were ordered by Sir William Alexander out of gratitude to Franklin for reading and commenting on Alexander's scientific papers. The first was done for Alexander himself. Later when he offered to have Martin do one for Franklin, Franklin had the elaborately carved chair of the original replaced by the simple one more in harmony with the rest of the picture as seen here in Peale's copy. The papers Franklin is reading are supposedly those sent him by Alexander, the bust of Newton suggesting their scientific character. Our painting was given to the Society by Peale in 1785, and accepted with thanks on December 16 of that year with the request that the artist keep it until the Society got a proper place for it. In our printed Minutes the editor says the portrait was done by Peale from life at the request of the Society on July 17, 1789.[36] This is incorrect because the Martin portrait of Franklin shows him in robust middle life, and, according to Peale's own account, Franklin was too ill for a sitting when he, accompanied by young Rembrandt Peale, went to Franklin's home at the behest of the Society to make the portrait. The portrait[37] by Peale of Franklin late

[36] *Cp.* printed Minutes, July 17, 1789, Early Proceedings of the Society, 1744–1838, *Proc. Amer. Philos. Soc.* **22** (3): 174, 1884.

[37] For a scholarly account of Peale's Portraits of Franklin, see Sellers, C. C., *Proc. Amer. Philos. Soc.* **94**: 251–257, 1950.

In conformity to a Resolution of the Society at a Special Meeting of Dec.r 27th. 1799 – a Portrait of the late General Washington, painted by Stewart was presented for their inspection, & was referred to a Committee of Mr. Wm. Hamilton – Mr. Latrobe & Dr. Jacobs, to report on its merits previous to any order for its purchase. –

FIG. 16. The Minute on the Washington portrait.

in life at the Historical Society of Pennsylvania reveals a very different Franklin. The fine portrait of Washington by Gilbert Stuart (fig. 15) was definitely done in response to a commission from the Society and duly purchased (fig. 16).

FIG. 17.

When it was finished, a Committee was sent to view it, and happily reported it as satisfactory. Jefferson by Thomas Sully, the most highly appraised financially and artistically of all our portraits, was presented to the Society by William Short in 1830, a gift that fitly commemorates Jefferson's presidency of the Society for eighteen years, and his active interest in its work for even a longer period (fig. 17).

On the rear wall of the Lecture Room are portraits of early officers of the Society including Caspar Wistar and Du Ponceau. The Society's commission for the portrait of its second president, David Rittenhouse (fig. 18) is clearly told in the following Minute under date of December 2, 1791:

Resolved, that Dr. Rittenhouse be requested to sit for his Portrait, and the same be painted by Mr. Peale, at the expense of the Society, to be placed in their Hall.

At the same time it was

Resolved, that the Portrait of Dr. Franklin presented some time ago by Mr. Peale, shall be framed in the best manner that the work can be executed for a price not exceeding Six Pounds.

Pine's portrait of Samuel Vaughan (fig. 3) has been discussed above.

FIG. 18.

Across the hall from the Lecture Room, the portrait of former President Morris appears conspicuously on the south wall of the secretary's office, appropriately placed because of his devotion to the cause of keeping the Society in Philosophical Hall in Old Philadelphia, and his close cooperation with Presidents Russell and Conklin, whose portraits are now hung on the east and west walls of the office. In the reception room to the left are now seen portraits of Priestley, Heckewelder and others including the remarkable portrait by Thomas Sully of Benjamin Rush (fig. 19) which may prove to be the original of the many familiar Rush portraits.

One other feature on the first floor merits attention. Not only is the treatment of the interior of the Hall on the Fifth Street side best seen from the west entrance, but the door on the yard (fig. 20) is in itself quite lovely, and should, as President Conklin has frequently suggested, be made our main entrance. Since our location on Independence Square is unique, and all discordant notes, architecturally speaking, have been removed, we can in this way not only show appreciation of our historic environment, but greatly increase the dig-

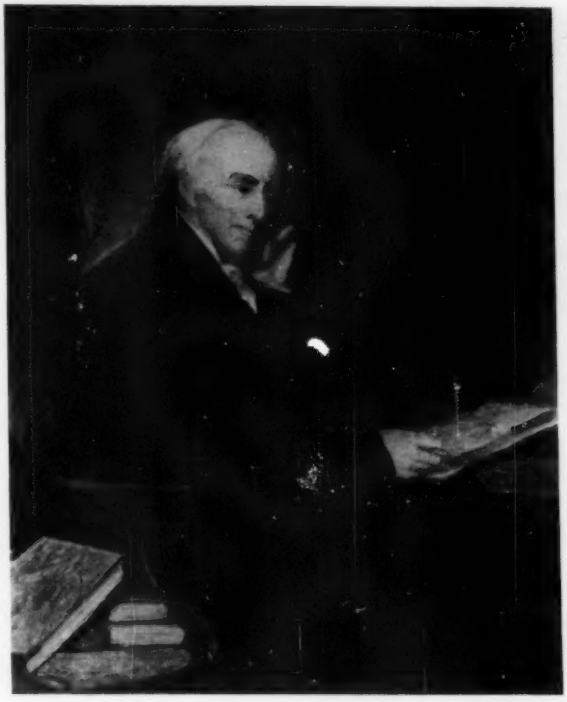

FIG. 19. Rush by Thomas Sully.

nity and charm that attaches to Philosophical Hall itself.

On the second floor, the north room, immediately over the Lecture Room, has been changed more than any of the others. The vault, which was built at a late date, and intruded into the southeast corner of the room thus destroying its original character entirely, has been removed. This affords a clear approach to a concealed dumbwaiter by which luncheons and dinners can now be brought from an up-to-date kitchen in the basement direct to the serving tables at the east end of this room, eliminating what has for years been a nuisance and inconvenience arising from bringing refreshments from the third floor. The north room is now restored to its original proportions, except, as in the rest of the rooms, for a lowering of the ceiling and a furring of outer walls to conceal pipes and other structural installations. Two fine colonial fireplaces, similar to those in the Members' Room, on the wall opposite the entrance give period atmosphere appropriate to one of the very rare treasures of the Society—the original of William Penn's great Charter of Privileges of 1701 (fig. 21). In excellent state of preservation with the Great Seal intact, it has recently been returned to its place in this room after being on tour with the Freedom Train. Granted by the Founder upon leaving for England at the end of his second visit to the province, it recalls his well-known comment:

> Ye shall be governed by laws of your own making, and live a free and if you will a sober people.

The south, or Members' Room, across the hall on the second floor is dominated, as one enters, by the portrait over the President's chair of Alexander von Humboldt (fig. 22), the great philosopher of nature, when philosophy still included nearly all fields of learning. It brings to mind his *Cosmos,* possibly greatest of those books of universal knowledge, before the development of the intense specialization of the last century and a half; a trend admirably illustrated by the two former presidents of the Society whose portraits flank von Humboldt—Dr. W. W. Keen and Professor William B. Scott, the first an eminent surgeon, the other an equally eminent geologist. The room as it used to be is seen in figure 23. Behind the President's desk is the intriguing library stepladder chair invented by Franklin and presented to the Society by his son-in-law, Richard Bache, as "the chair in which his Father-in-Law, Dr.

FIG. 20. Doorway facing Independence Square.

FIG. 21. A part of William Penn's Charter of Privileges of 1701, showing signatures and the Great Seal.

Franklin, used to sit when the Meetings of the Society were held at his House." In the new arrangement Franklin's chair (fig. 24) is no longer used by the presiding officer, but occupies a place of honor on his right, while Jefferson's revolving arm chair with the wide arm desk (fig. 25) on which he wrote the Declaration of Independence is on the left of the rostrum. Rittenhouse's clock still accurately ticking the seconds, his telescope used in the observations of the transit of Venus in 1769 are now back in their accustomed places while the electrical apparatus used by Franklin with other memorabilia are in the cabinets on the north wall.

Above these to the right of the door as one enters there is a remarkable, and heretofore unknown portrait of Franklin (fig. 26). Acquired this year through the enterprise of Dr. Chinard, it is a superb addition not only to the room, but to the portraits of Franklin in general. The artist is not known, but the provenance is thoroughly established.[38] Presented by Franklin to the daughter of Madame Helvétius on the occasion of her marriage, it remained in her family till its recent acquisition by the Society. A strong, understanding, and somewhat quizzical Franklin now takes his place in the Executive Sessions of the Society he founded, and served as president for more than two decades. On the other side of the door on the same wall is the portrait after J. Vanderbank of Sir Isaac Newton (fig. 27), another recent and appropriate acquisition—the mathematical genius and philosopher of the *Principia* (1687) on one side, and the speculative empiricist of *Opinions and Conjectures on Electricity* (1749) on the other.

[38] *Cp.* Gilbert Chinard, Abbé Lefebvre de la Roche's recollections of Benjamin Franklin in this issue of the *Bulletin, Proc. Amer. Philos. Soc.* **94**: 214–221, 1950.

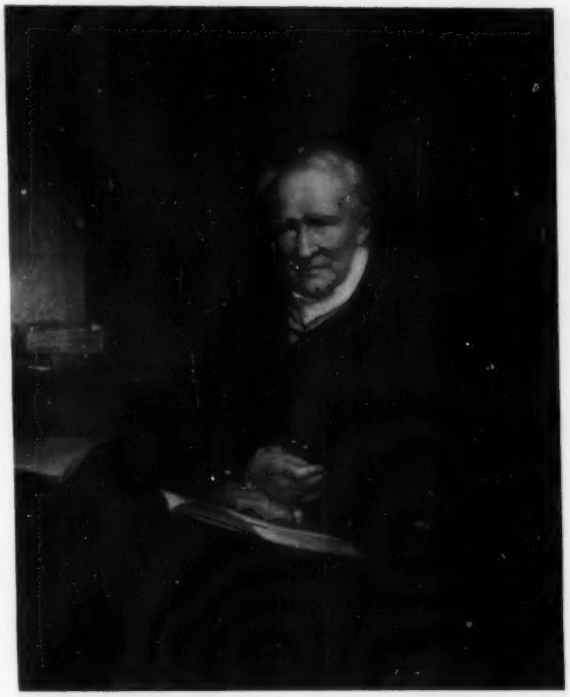

FIG. 22. von Humboldt by J. R. Lambdin.

PHILOSOPHICAL HALL TODAY

Philosophical Hall as it stands today again meets the aesthetic demands of its environment, as well as most of the practical needs of the Society. Although space has been lost in the removal of the third story, some has been regained in the remodeling of the west end of the basement formerly occupied by the caretaker and his family, affording room for current publications and the new vault. On the other hand, the activities of the Society have increased to such an extent that even with the separate housing of the Library, the Hall is used to capacity. An account of the numerous worthwhile projects, organizations, and publications that have emanated from the collective thought and association in the Hall would take us too far afield.[39] On the other hand, more than a casual reference should be made to the marked change in recent years in the character of the membership and a corresponding change in the activities in and about the Hall.

FIG. 23. The Members' Room as it used to be.

The general meetings of the Society, begun early in the century and finally established in 1912, have served to bring together members from far and near, and this, coupled with the adoption of the new by-laws has led to the transformation of the Society from one that had become predominantly local to one more distinctly national in character.

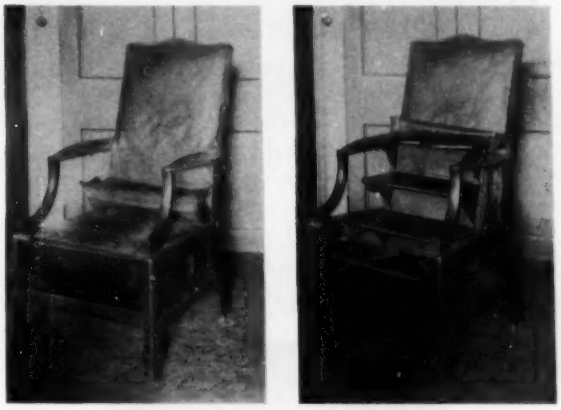

FIG. 24. Franklin's library chair.

The fortnightly meetings on alternate Fridays of former years have been discontinued. Instead there are now two, or at the most three, general meetings a year, with the emphasis on the Annual Meeting and elections in April. This doesn't mean, however, that there has been a decline in the work of the Society. Quite the contrary. Today the meetings extend over several days instead of being confined to a single evening.

Moreover, and this is of especial significance, the effective work of the Society is now done by standing and special committees. The former meet four times or oftener a year; the latter on call of the chairman as occasion dictates. As a result, there are regularly more than one hundred

[39] For an excellent survey of these activities in recent years, see Dr. Conklin's *Brief history of the American Philosophical Society* revised and brought up-to-date in the current *Year Book*.

FIG. 25. Jefferson's chair with armrest on which he wrote the Declaration of Independence.

members actually occupied with the Society's problems of research, publication, meetings, finance, library, and general policy. In all cases, discussion, rather than formal papers, mark the procedure. This usually follows a carefully developed agenda prepared in advance of the meeting. It focuses attention on the issues involved and facilitates the formulation of the collective opinion of the different groups on the major problems of the Society. Neither the work of the committees, nor that of the officers and staff engaged in its promotion and integration is on display as are our portraits and memorabilia. But even the brief survey of it as it is presented annually in the *Year Book* clearly reveals that the story of Philosophical Hall today, more than ever before in its history, presents a constantly increasing devotion to the ideals projected by Franklin in his *Proposal* of 1743, two hundred years ago.

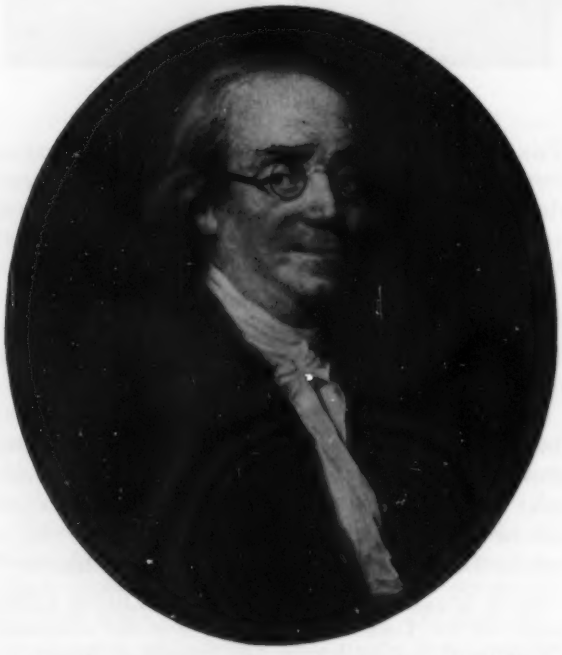

FIG. 26. Recently discovered portrait of Franklin.

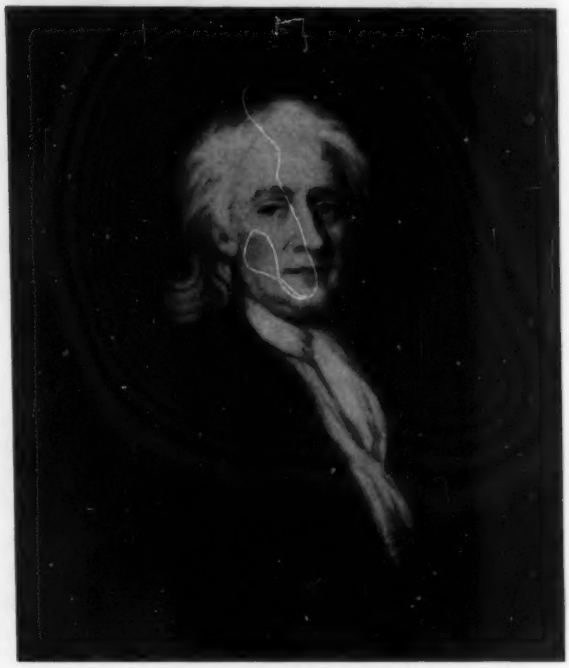

FIG. 27. Sir Isaac Newton after Vanderbank, 1725.

A PROPOSAL AND AN OPPORTUNITY

For a learned and scientific society, the value of an attractive and distinguished home like Philosophical Hall cannot be easily overestimated. In the past it did much to hold the membership together in days of depression and crisis, providing the physical basis for continuity in the association of its members, promoting and assisting projects of research and publication, and bringing together historical and scientific collections of great value in our Library. It has served as a powerful magnet for gifts and bequests which, with acquisitions acquired through purchases, in the heyday of prosperity in 1929 were appraised at thirty million

FIG. 28. The Second Bank of the United States, later the Old Custom House. J. Tingle after W. H. Bartlett. Courtesy of the Carl Schurz Memorial Foundation.

dollars. Even if considered only as a real estate venture, Philosophical Hall is by far the most successful investment made by the Society in the more than two hundred years of its history. The lot on the Parkway offered in exchange for our Hall in 1911 had cost the city over a million dollars. To these gratifying positive returns should be added the strong influence of an attractive and dignified home in keeping the Society alive and active. To any one familiar with the record, the fate of the Society, had Philosophical Hall not been built, is fairly obvious. It makes one wonder how posterity would appraise an investment the Society might make some time during the next decade in a library building to house our great collections of manuscripts, imprints and books, and enable scholars to put them to work more efficiently. We need research and conference rooms; a reading room adequately lighted and equipped with all the necessary works of reference; up-to-date laboratories for photography and microfilming, restoring manuscripts and books; a general work room for the staff; vaults secure against fire and water hazards, and air conditioning as far as possible.

In all the early proposals for a building, housing of the library is definitely associated with a place for meeting. The Minutes of July 19, 1783, for example, express it as follows: "It having been long in contemplation of this Society to purchase a lot . . . for the purpose of erecting a Hall for the reception of the Books and natural curiosities. . . ." This responsibility of providing for the Library has been accepted as axiomatic throughout the entire history of the Society. Again and again, as we have seen, it raised problems, the attempted solution of which, seriously influenced policies. After wandering from place to place before Rittenhouse, its first librarian, brought it together in his home, and later to "one of the chambers" in Philosophical Hall, it remained in the Hall till 1934. Since then it has occupied the old quarters of the Philadelphia Stock Exchange in the Drexel Building, developing rapidly as a highly specialized library in accordance with the policy approved by the Society in 1941. Now, however, it is again under the necessity of moving. As progress in the acquisition of properties by the Government in the Philadelphia National Historical Park area develops, the present home will probably disappear. Fortunately, the south end of the Old Custom House (fig. 28), which was taken over by the Government as a national shrine, and leased to the Carl Schurz Foundation, is available. Negoti-

ations for its occupancy by the Library are in progress.

Opinion on the question as to whether this will solve the library problem for the future differs radically. The Parthenon, which served as the model for this fine example of the revival of classical architecture in this country, was not designed for library purposes. Moreover, its massive construction within and without makes remodeling of even a minor sort extremely difficult and costly, quite apart from the watchful care of the Department of the Interior against structural modifications in national shrines. With this in mind alternative solutions should not be dismissed without serious consideration. Hence, a proposal, although suggested before in these pages, is here presented in a somewhat different form in the light of recent developments.

Almost directly across from Philosophical Hall on the corner of Fifth and Library Streets, stood the fine old Georgian building (fig. 29) designed by William Thornton and erected in 1789–1790, for the oldest circulating library in the country, founded by Franklin and his friends in 1731. Till its unfortunate demolition in 1887, it was an integral part of the Independence Square-Carpenters' Hall group of buildings. The proximity of the site to Philosophical Hall, and the consequent ease of consulting the Library located at, or near, this spot by the publication and other departments of the Society, would make this an ideal location for practical, as well as historical and esthetic reasons. The lot on the corner of Chestnut and Fourth Streets at present owned by our Society could in all probability be exchanged for this site or some other in this area of the East Mall.

If the Society were to restore the Library Company building in its exterior design, giving careful consideration to the need of modernizing the interior, it would meet the present and future needs of the Library in a thoroughly practical and efficient manner. At the same time it would be making

FIG. 29. Library Company of Philadelphia. Engraving by Birch (1799).

FIG. 30. Independence Square looking east from Sixth Street. 4. Philosophical Hall. 5. Library Company of Philadelphia. 6. Carpenters' Hall. *Columbian Magazine* 1790.

another contribution toward the restoration of the most remarkable group of historic buildings in this country (fig. 30). More than that, Philosophical Hall and Library Hall taken together would be a monument to Franklin vastly superior to the Franklin House on the Parkway. It would be located amid the places he knew, where he walked and consorted with his friends. It would be less than three squares removed from his home in Franklin Court, now being studied for improvement and possibly restoration in connection with the Independence National Historical Park (fig. 31). The significance of such a solution of our library problem cannot be easily overestimated.

Moreover, the foresight of members and patrons of our Society in the past provided for just such a contingency. Two substantial funds for building, carefully guarded in the terms of the bequest by the donors against other uses, have been made to the Society. Although a modest amount was used for the current restoration of the Hall, the principal should, in accordance with the compound interest curve, increase rapidly enough to meet the proposed restoration. Few investments, even from a purely financial standpoint, would net an equal return either on a short or long-term basis. The story of Philosophical Hall, and of other historic buildings and sites, as for example, the great conservation and restoration of Colonial Williamsburg, prove conclusively that the return in the form of those imponderables, frequently implied in this narrative, far exceeds even the highest financial or material returns.

Libraries, it cannot be too often repeated, are not just bricks and mortar, or even just books and manuscripts. They are the custodians of ideas, and ideas are the dynamics of progress. No better illustration of this could be found than that afforded by the Declaration of Independence of which our Library has happily preserved, what might be called, three significant originals. The first, a broadside on vellum from the papers of David Rittenhouse; the second, a contemporary broadside on paper said to have been used by Colonel John Nixon as he read it on July 8, 1776 from the observatory erected by our Society in Independence Square in the summer of 1769 to observe the transit of Venus, and the third, the priceless manuscript copy of the Declaration in Jefferson's own hand indicating minor emendations by Franklin and John Adams. While the importance of the ideas of the Declaration in American history are well known, their impact on the political history of Western Europe and on the world in general is far from being appreciated. Indeed, even here in Philadelphia at the present time few realize how important a factor they have been, and are, in the great civic and patriotic developments so frequently referred to in this study (fig. 31).[40] Ideologies dominate the present cen-

[40] The accompanying plan of the federal and state projects (fig. 31) was executed by Grant M. Simon, the architect for the Philadelphia National Shrines Park Commission. The state project includes Fifth and Sixth Streets and the land between, from Chestnut to Vine Streets, to the Delaware River Bridgehead adjoining Franklin Square, one of the open spaces provided by William Penn for his "Greene Towne." The federal project, to be known as Independence National Historical Park, comprises four separate areas indicated respectively as Federal Area A, B, C, D. The main section includes the area between Walnut and Chestnut Streets from Independence Square at Fifth Street to, and including, Second Street toward the east. Area B, as shown

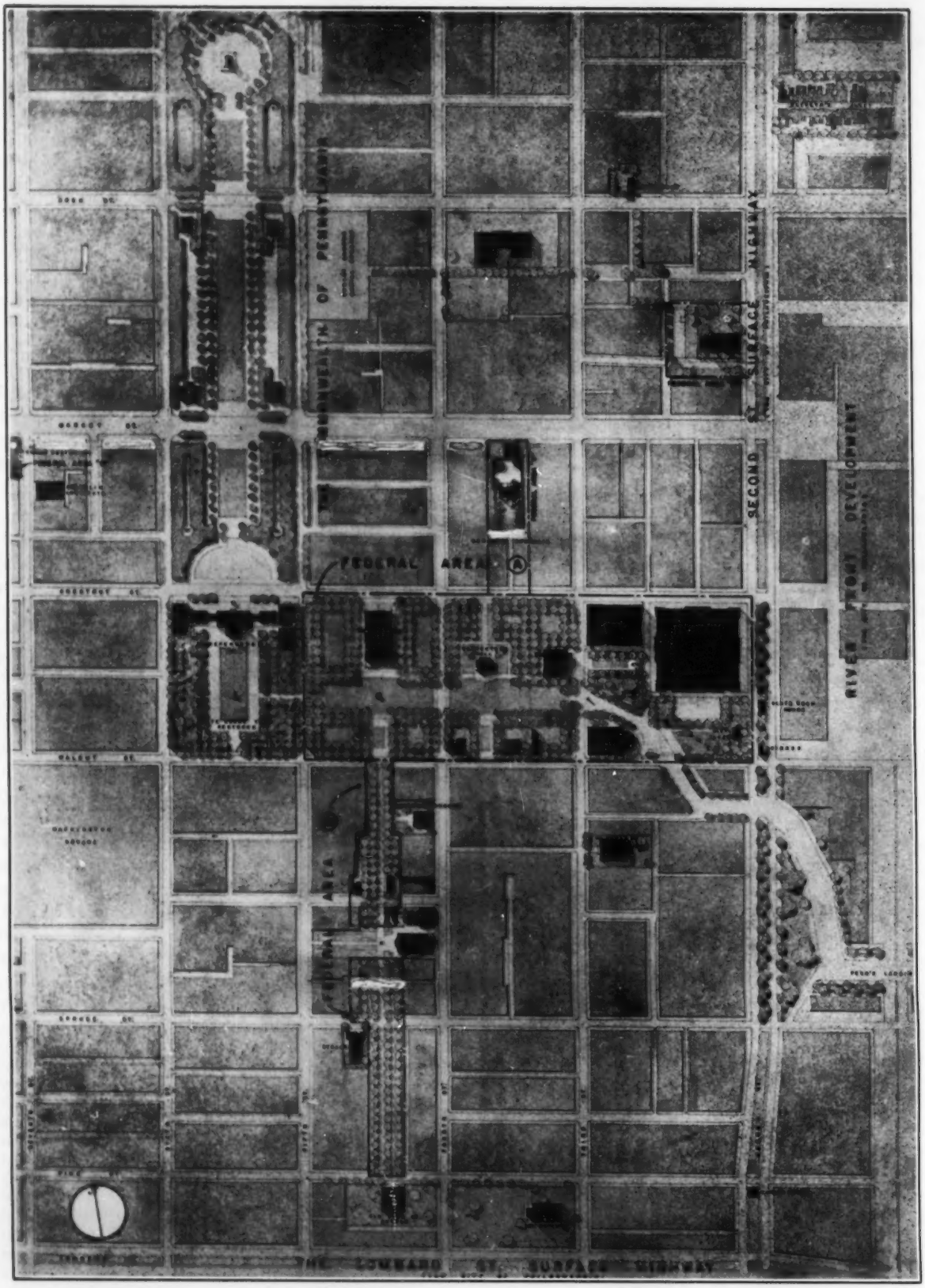

FIG. 31. Plan of federal and state projects for Old Philadelphia. Courtesy of the Philadelphia National Shrines Park Commission.

tury even more than the eighteenth. At the moment they are engaged in a portentous struggle for the international control against the unlicensed use of the atomic bomb. The millions we are spending on the Marshall Plan will be fruitless unless the liberty of the individual and freedom of peoples, scientifically integrated with equality of opportunity and social justice are associated with them. Franklin, our first and still ranking diplomat, had neither money nor guns. He represented ideas. These he disseminated as only he knew how, through the most powerful weapon of his age, the modern printing press. More dynamic and enduring than the armies of Napoleon or the subsidies of Pitt, they are alive and operating today.[41]

Science and invention are multiplying the powers of production and control over nature in incredible geometric progression. Time for leisure and cultural pursuits are increasing correspondingly. A forty-hour work week and atomic energy present a challenge Franklin would be eager to meet. For him leisure meant opportunity for culture and better living:

> The first drudgery of settling new colonies, which now confines the people to mere necessaries, is now pretty well over and there are many in every province in circumstances that set them at ease and afford leisure to cultivate the finer arts and improve the common stock of knowledge.

or, as Jefferson expressed it in his letter of January, 1797, accepting the presidency of the Society:

> to see knowledge so disseminated through the mass of mankind, that it may at length reach the extremes of Society, beggars and Kings.

The wisdom of the Founders, coupled with the extraordinary faith in ideals, organized the American Philosophical Society, the oldest scientific and learned society in America, and built Philosophical Hall on Independence Square. For one hundred and sixty years the Hall has been a symbol of the freedom and universality of science and learning at home and abroad. To rise to the standards the Founders set, the present and future generation of members must, to paraphrase the words of Sir Isaac Newton, **stand on their shoulders and see farther.**

in the original plan of the Commission, extended from the Old Custom House on Sansom, formerly Library Street, southward to Pine. It is to be developed as an open walk through this historic section, but in the passage of the Act it was abridged to stop at Manning Street as indicated by the white line just north of Spruce Street. A similar cut occurred in Area C, or Franklin Court, shown also by the white line. Area E, Christ Church and adjoining properties on North Second Street, continues as on the plan. Unfortunately, just the opposite is the case with Area D, the site of the Graaf House where Jefferson wrote the Declaration of Independence. For reasons difficult to understand, it was eliminated altogether. Besides having obvious merits of its own, it would afford the opportunity, as indicated by the white line recessing the south side of Market Street for several blocks, of overemphasizing the association of Jefferson, Washington, and Franklin in Philadelphia during the critical period of our nation's history.

[41] For an interesting illustration of the continuing influence of Franklin see the article in this number of the *Proceedings* by Dr. Antonio Pace on p. 242.

ABBÉ LEFEBVRE DE LA ROCHE'S RECOLLECTIONS OF BENJAMIN FRANKLIN

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A YEAR ago the American Philosophical Society had the good fortune to obtain from Paris a portrait of Benjamin Franklin which now hangs in the Hall of the Society and is reproduced here.

Art experts agreed that it was an eighteenth century original, a piece of good painting, although not a masterpiece and unlike the previously known portraits of the same period. Its authenticity was vouched for by Marquis de Mun, a lineal descendant of Madame Helvétius, who certified that according to a family tradition the portrait had been presented by Franklin himself to Madame de Mun, a daughter of Madame Helvétius, one of the "little stars" and had since that time remained in the uninterrupted possession of the family and in the Château de Lumigny.

When the portrait was brought to Philadelphia and compared with the other portraits of Franklin, it was observed at once that Franklin's expression was entirely unlike that of the Greuze, the Cochin, or the Duplessis portraits. It is a Franklin, benevolent, smiling, and amused, with a twinkle in his eye, completely relaxed and ready to talk. This is indeed "bon papa Franklin," grandfatherly, but not so grandfatherly that he had not an eye for a pretty girl and did not enjoy a love or drinking song. But this was only an impression. It happens, however, that the document published here corroborates the impression of the Franklin students who have seen the portrait. This alone would warrant its publication in full, even if it did not contain in addition many intimate details on Franklin's life in France, so that it could be rightly entitled "Franklin himself or conversations with Dr. Franklin."

It is to be found in the papers of abbé Lefebvre de la Roche preserved in the Bibliothèque de l'Institut de France with many manuscripts and documents concerning Helvétius. Its approximate date can be ascertained from the subscription. It was intended for "Citoyen Pierre Didot, Imprimeur du Sénat." As the Sénat was established by the "Constitution de l'an VIII," ratified in December 1799, and since it seems from the mention of Madame Helvétius that she was still living, abbé de la Roche's memoir was probably written between the first date and Madame Helvétius's death which happened on August 24, 1800. Even if this later date were questioned, it is unlikely that de la Roche would have used the appelation of "citizen" after the first years of the Consulat. On the other hand, it does not seem that Pierre Didot ever printed the selection of Franklin's moral works to which he intended to add the anecdotes he had requested from the abbé. Printed recollections of Dr. Franklin were already obtainable, Cabanis had published his, and J. B. Le Roy's "Note sur Franklin" had been appended to abbé Fauchet's *Éloge civique de Benjamin Franklin,* delivered on July 21, 1790, and printed the same year in Paris. Few men, however, not even abbé Morellet and Le Roy, had known Dr. Franklin as intimately as abbé de la Roche. A member of the inner circle of Madame Helvétius's society, living at the house of "notre Dame d'Auteuil" as she was called by her intimate friends, he had shared not only the conversation but the sherry and the Madeira of the doctor, who had not been slow to realize that a bottle of a rare vintage was one of the surest ways to win his welcome among the French "philosophes" of the time. The following letter from the Franklin papers in the collections of the Society bears sufficient witness to the friendship existing between the French abbé and the American philosopher.

Auteuil, ce 27 juillet 1787.

Il faut donc, mon cher Papa, ne plus s'entretenir avec vous que comme les Dévots le font avec les Substances célestes que l'on ne voit, ni n'entend, et que l'on n'espère rencontrer face à face, que quand nous existerons dans un ordre de choses où nous serons bien étrangers à tout ce qui se passe dans ce monde-ci. Nous nous y trouvions cependant si bien quand nous étions ensemble autour d'une bonne table à déjeuner; que nous parlions de morale de politique et de philosophie; que notre Dame d'Auteuil éveilloit votre coquetterie et que l'abbé Morellet nous disputoit la crême et mettoit son argument bien en forme pour

FIG. 1. Portrait of Benjamin Franklin given by Franklin to the daughter of Madame Helvétius when he was in France, recently purchased from the family by the American Philosophical Society. Artist unknown.

nous prouver ce que nous ne croyions pas; alors nous eussions volontiers renoncé à l'autre Paradis pour conserver celui-ci, et vivre comme nous étions, toute une éternité. Mais un autre Paradis vous attendoit et vous appeloit en Amérique. Vous avez quitté celui d'Europe, pour achever ce que la Providence ne pouvoit faire sans vous dans un pays qu'elle veut rendre libre et heureux. Nous respectons trop ses peines pour nous plaindre de ce qu'elle fait le bonheur des autres aux dépens du nôtre. Elle nous en dédomage un peu en nous laissant de vous un souvenir qui nous occupe souvent. Nous nous reposons sur vos enfans, sur vos amis, sur vos bons Américains du soin de vous aimer, comme nous faisions; d'égayer votre vieillesse et de vous payer de tout le bien que vous avez voulu faire à l'humanité et à vos compatriotes. Nous nous plaisons à imaginer que vous serez le seul bienfaiteur des hommes qui aurez échappé à leur ingratitude: ce qui sera contre les détracteurs des siècles modernes un argument sans réplique de la perfectibilité de l'espèce humaine.

Notre Dame d'Auteuil a eu tout ce Printems une santé un peu languissante. Elle se porte maintenant beaucoup mieux. Pour sa convalescence, nous lui avons donné une fête à laquelle tous ses amis, toutes les petites étoiles et près de quatre cens personnes ont assisté. Les premiers acteurs de la Comédie française se sont empressés de lui jouer la Tragédie de Philoctète traduite de Sophocle, et la première actrice de l'opéra a joué la Servante maitresse, opéra mis en musique par le célèbre Pergolèse, le plus fameux compositeur Italien; il ne manquoit que vous pour compléter la fête, et la rendre la plus agréable qui ait jamais été donnée. C'étoit la fête de l'amitié qui rarement en reçoit de pareilles, quand la vanité ne s'en mêle pas. Vous aprendrez sûrement par nos papiers publics les résultats de notre dette nationale en tems de paix; le remède qu'on espère trouver dans l'établissement et la formation des assemblées provinciales que l'on établit de toutes parts dans le Royaume; le refus que nos Parlemens font d'enregistrer un Edit du Timbre qui a causé votre Révolution. La fermentation des Esprits français sur les affaires politiques est générale. Il est difficile de prévoir la tournure que tout cela va prendre. D'un côté le besoin urgent, de l'autre la misère des Peuples et le refus de nouvelles contributions de la part des grands corps de l'Etat; voilà une position inquiétante. La Guerre civile est en Hollande, le trouble se répand dans les Provinces du Brabant le long de nos frontières. Les Flamands ne veuillent [*sic*] absolument pas admettre les nouvelles constitutions que l'Empereur veut établir chez eux. Tout est en fermentation, il n'y a que le désordre des finances qui puisse nous sauver de la nécessité d'une guerre qui nous menace.

Votre cri de liberté retentit dans toute l'Europe, jusque dans la Turquie même—votre assemblée de notables eût sûrement opéré plus efficacement que la nôtre. Votre corps politique est un modèle vigoureux dont vous n'avez qu'à consolider la convalescence, en lui prescrivant un bon régime. Ce sont des médecins habiles qui se proposent de la lui faire adopter. Notre ami l'archevêque de Bordeaux doit vous avoir répondu. Il étoit de l'assemblée des notables. Nous ne l'avons vu qu'à la fin, et nous avons employé une partie de la journée qu'il est venu passer avec nous à lire vos lettres que nous avions reçues, et à nous occuper de votre souvenir, des témoignages que vous nous en donnez, et du bonheur dont vous jouissez dans votre patrie et au milieu de votre famille. Parlez quelquefois de nous à M. Temple et Benjamin, les seuls que nous ayions quelque espérance de revoir peut-être dans ce pays-ci. Les seuls qui nous rappellent encore des souvenirs agréables. Nous vous embrassons à travers les mers qui nous séparent, et suis en particulier et pour la vie.

Mon très respectable ami, votre dévoué serviteur,

LEFEBVRE DE LA ROCHE

The note written for Pierre Didot is in the same vein. The first and smaller part of it does not add anything of value to what was already available through the part of the *Autobiography* published in France. Fortunately abbé de la Roche soon gave up any attempt to moralize and philosophize in order to tell some "less known anecdotes of Franklin's private life" and to report, with what seems to be stenographic fidelity, the very words of Franklin in his conversations at the house of Madame Helvétius.

It will be seen, what we already suspected, that Franklin must have considered as an ordeal the many social functions and elaborate receptions which he had to attend. Knowing French well enough to understand his interlocutor when he was directly addressed, he was completely at sea in a society in which four persons or more were speaking at the same time, or when he was besieged by a bevy of pretty women each of them eager to attract his sole attention. Yet it was his duty to make as many friends as he could for his country, to please everybody, to antagonize nobody, "de plaire à une nation qu'il voulait rendre amie de la sienne." This required more than ordinary tact and diplomacy; he could afford no mistake and no misstep, for if he had made friends among the "philosophes," the court, and particularly the Queen, entertained prejudices against this man who, before being sent as an ambassador to France, was "some sort of a foreman in a printing shop and in Paris would at best have been a bookseller."

How he succeeded in carrying out his almost impossible task without ever losing his composure

nor ever showing any sign of irritation or weariness is a matter of historical record. When in the company of his Auteuil friends, however, he could unbend, indulge in jokes, hoaxes, and paradoxes, quarrel with abbé Morellet over his portion of dessert and compare the spiritual bliss of Paradise with the earthly and substantial pleasures of the Auteuil Paradise.

He was in such a mood when he had his portrait painted at the house of Madame Helvétius, obviously at her request. As early as 1780 he had been pestered by so many artists that he systematically refused to yield any more to their entreaties. "I have at the request of friends, sat so much and so often to painters and statuaries that I am perfectly sick of it. I know of nothing so tedious as sitting hours in one fixed posture," wrote Franklin to Thomas Digges.[1] But in Madame Helvétius's salon he was not sitting for posterity. The portrait was intended for his friend and one of the "little stars," and abbé de la Roche remembered that "papa Franklin" would say to his friends:

> "Cheer me up, otherwise you will have of me the saddest picture." Then in order to entertain him some one would read from a collection of witty sayings, particularly those he preferred in which the saltiness of the wit always conceals a moral point. There was no story which he did not match with another one of the same kind, a feat which denoted a stock of facts and anecdotes truly prodigious in a man of his age.

Thanks to abbé de la Roche we can account for the unique quality of the portrait now in the Hall of the Society. This is Franklin as he looked when he was among his friends, listening to a good story but having already on his lips the beginning of a better story which would drive home some point of homely philosophy. This is Franklin as he wished to be remembered by notre Dame d'Auteuil, and her "little stars," not as the bold experimenter who played with lightning, not as the cautious diplomat and statesman conscious that in his hands rested the destiny of his country. This is Franklin in Paris, but undoubtedly this is also Franklin as he looked when back in Philadelphia he found himself again among his friends of the American Philosophical Society.

Even more amazing to his French friends than his prodigious memory was Franklin's physical endurance and capacity for work. De la Roche recalls how at the age of eighty Franklin could swim across the Seine at Passy, how he did also sit for days at a stretch in his easy chair when business required his constant attention, dozing for one or two hours and waking up refreshed and ready for another day's work, as if it had been the beginning of another morning.

In his article entitled "Franklin returns from France, 1785," Mr. Charles Jenkins has translated a short passage from abbé de la Roche's memoir;[2] we shall leave to the reader the joy of discovering in the original French the bits of dialogues and apologues in which the good abbé succeeded, as it seems, in catching the words and the very voice of Dr. Franklin. His conclusions however deserve special attention. When all is said, the extraordinary popularity enjoyed in France by Dr. Franklin during his mission, after his return to his native country and after his death is not easily explained. Granting that, in the words of abbé de la Roche, this "extreme enthusiasm of the French for Dr. Franklin was much to the honor of their nation," the fact remains that Franklin set out deliberately to cultivate the favor of the French people. This no man could have done by adopting a pose. Franklin succeeded by practicing the homely maxim that honesty is the best policy and by convincing the French that he was fundamentally honest in all his dealings with them. In his negotiations with Vergennes and the French officials, he applied the very methods he had used in all his scientific experiments, neglecting the non essentials and attacking directly the core of the problem with the means at his disposal. This was clearly seen and mentioned by abbé de la Roche but put even in a better light by another close friend of Dr. Franklin. Although, as indicated above, the "Notes" of J. B. Le Roy were printed in an appendix to the *Eulogy* delivered by abbé Fauchet in 1790, they fit in so perfectly with de la Roche's recollections that we may be permitted to reprint here the final paragraph. As a thumb-nail portrait of Dr. Franklin it can hardly be surpassed:

> Je ne veux pas finir sans ajouter un mot sur le véritable caractère de son esprit et la trempe de son âme. Tranquille, calme et circonspect, comme les gens de son pays, on n'a jamais pu citer, pendant tout son séjour ici, et dans les circonstances délicates où il se trouvoit, un mot, une réflexion qu'on ait pu lui reprocher, ou qui ait pu le compromettre; ce qui est vraiment bien rare pour un homme que tout le monde observoit de près, vu le rôle qu'il jouoit ici. Il avoit

[1] Smyth, Albert H., ed., *Writings of Benjamin Franklin* **8**: 110, N. Y., Macmillan, 1905–1907; quoted by Van Doren, Carl, *Benjamin Franklin*, 631, N .Y., Viking, 1938.

[2] Jenkins, Charles H., Franklin returns from France—1785, *Proc. Amer. Philos. Soc.* **92** (6): 419, n. 10, 1948.

tout le courage nécessaire sur les événemens; mais de ce courage ferme qui appartient aux âmes élevées, qui, ayant tout considéré, regardent ces événemens comme des suites nécessaires et inévitables de l'ordre des choses. Quant à son esprit, il avoit un caractère particulier, et qu'on n'a pas assez remarqué, c'étoit de toujours considérer, dans les choses, la manière la plus simple de les envisager. Dans ses vues philosophiques et politiques, il saisissoit toujours, dans une question, le côté le plus simple. Si c'étoit dans une explication de physique, c'étoit encore la même chose. Dans la disposition d'une machine, c'étoit encore la même marche. Enfin, par un privilège heureux, lorsque la plupart des hommes n'arrivent au vrai et au simple qu'après un long circuit, et des efforts multipliés, son excellent esprit le menoit aux moyens les plus simples d'expliquer le phénomène préparé, de construire la machine dont il avoit besoin; enfin de trouver les expédiens les plus propres à faire réussir les projets ou les commissions dont il étoit chargé.

Au C. Pierre Didot
Imprimeur du Sénat

Sur Franklin

Vous vous proposez, mon ami, d'imprimer un choix d'opuscules moraux de Franklin, et d'y joindre quelques uns des traits de sa vie les plus propres à caractériser sa personne et son génie. Ses Mémoires imprimés et son Eloge par Condorcet à l'Accadémie des Sciences vous en fourniroient un grand nombre. Mais vous pensez que ma liaison avec ce grand homme, pendant son séjour en France, a pu me faire recueillir des faits particuliers qui, bien que légers en apparence, ont eu de son aveu la plus grande influence sur son caractère et sur toute la conduite de sa vie. Les moindres faits de l'histoire d'un homme célèbre deviennent les plus intéressans, quand ils amènent un nouvel ordre d'idées qui change tout à coup la détermination de sa volonté. Ces petits événemens méritent qu'on les observe. Ils forment souvent notre première éducation. Ils resteroient ignorés, si du haut point de vue où l'on arrive, on ne jettoit en arrière un coup d'œil réfléchi sur le point obscur d'où l'on est parti.

Je parlerai peu de ce que l'on a lu, ou de ce qu'on peut lire ailleurs. Je ne m'attacherai qu'à ces faits propres à donner aux penseurs l'occasion de réfléchir sur la nature des petites causes qui, même dans l'enfance, servent à développer le caractère d'un homme extraordinaire. Ils aimeront à voir ce qui dut produire dans Franklin cette série de pensées et d'actions, cette énergie de volonté propre à maîtriser les obstacles qui s'opposoient au développement de ses facultés phisiques et morales.

Il étoit né de parens peu fortunés, dans un pays nouveau où les besoins pressans de la vie nécessitoient le travail des mains, et laissoient peu de tems à la culture de l'esprit. Boston sa Patrie n'étoit alors que le lieu de rassemblement de quelques navigateurs et d'avanturiers de l'Europe. Quelques arts utiles y naissoient à peine. Il n'y avoit ni Bibliothèque particulière, ni établissemens d'instruction publique, Des charlatans religieux y prêchoient des dogmes absurdes et une morale fanatique, et tous les vices de l'ignorance superstitieuse mettoient les plus grands obstacles au progrès des lumières. Dans cette éclypse de la raison, de quel courage ne faut-il pas être doué, quand tous les moyens manquent à la fois pour éclairer son entendement et se garantir des erreurs généralement accréditées. La Bible étoit le seul Livre connu et peu de colons même savoient y lire.

Le jeune Franklin, ouvrier d'Imprimerie, n'eut pour s'instruire lui-même que des feuilles de gazettes et du Spectateur anglois. Encore les lisoit-il à la dérobée, à l'insçu des ses parens, et dans les heures prises sur son sommeil. Un volume de Plutarque tombé par hazard entre ses mains, lui offre le traité sur l'usage de la chair des animaux. Frappé des raisonnemens de cet Ecrivain, il prend la résolution de s'en abstenir. Un des amis de sa famille à table avec lui, ne le voyant manger que des fruits et des légumes, demande à sa mère: "Pourquoi votre enfant ne touche-t'il point à la viande? C'est aparemment, dit-elle, qu'il a lu cela dans quelque vieux fou de philosophe."

Ce léger sarcasme le toucha peu. Il ne renonça à son abstinence qu'après avoir observé que beaucoup des gros poissons se nourrissoient des petits. Il vit dans cet instinct des Etres vivans cette dure nécessité qui soumet le foible à l'empire du plus fort, ou du plus adroit. Il disoit à ses amis que cette observation l'avoit déterminé de bonne heure à se soustraire, selon ses moyens, à la dépendance de cette force amorale qui courboit les hommes sous le joug du Despotisme, et qu'il songea dès lors à se rendre libre, à s'affranchir de ses besoins inutiles pour acquérir des connoissances et accroître une industrie qui diminueroit sa dépendance. "Etre utile aux autres, disoit-il, et en dépendre le moins possible, c'est se raprocher de la perfection de cet Etre tout puissant qui fait du bien à tous, et n'a besoin de personne." Cette maxime d'un ancien philosophe fut toute sa vie la règle de sa conduite.

Ministre plénipotentiaire de la République, dans un grand âge, un seul domestique lui suffisoit. Encore s'en servoit-il peu. Il avoit observé qu'avec deux, on n'en avoit que la moitié d'un, et avec trois, presque point du tout.

Accoutumé à tout faire par lui-même, doué d'une adresse singulière formée par l'habitude, dans un pays privé de tous les arts sçavans de l'Europe, il eut besoin, pour faire ses belles découvertes en électricité d'imaginer et de fabriquer les instrumens nécessaires

à ses expériences, de se faire pour cela des outils qu'il apelloit ses mains. C'est avec beaucoup d'art qu'il simplifioit ces instrumens, en les proportionant aux seuls effets qu'il en devoit attendre, il les rendoit souvent bien supérieurs à ces machines dispendieuses et compliquées qui ne sont chez nos phisiciens que des ornemens de cabinet.

Franklin aimoit et recherchoit en tout la simplicité et ne mettoit de prix dans ses meubles comme dans sa vie qu'aux jouissances réelles. Il n'estimoit la valeur des choses que relativement au but d'utilité ou de commodité qu'elles procuroient.

"Que sert, disoit-il, un bonheur même de la vanité, tout le luxe incommode de vos plus beaux apartemens, J'y vois le marbre, les porcelaines et la dorure prodigués sans utilité, des cheminées élégantes qui fument sans chauffer, des tables où l'on ne peut écrire qu'à contrejour et sans geler de froid, des lits et des alcôves où l'on dort bien en santé, mais où quand on est malade il est impossible d'être bien soigné, de lire ou d'écrire commodément."

Se trouvant à Londres, un des Lords de la Chambre des Pairs, le mena voir une maison qu'il venoit de bâtir dans une rue étroite, sur un terrain irrégulier qui nécessitoit la même irrégularité dans tous les apartemens et en rendoit la disposition très incommode. De belles colonnes ornoient la façade et diminuoient encore le peu de profondeur du local. "Milord, lui dit Franklin, pour mieux jouir de votre maison et de sa superbe colonade, il ne vous reste plus qu'à louer un apartement commode vis à vis, de l'autre côté de la rue."

C'est ainsi que cet homme simple qui a fait de si grandes choses aprétioit tout ce qui ne tendoit point directement aux vraies jouissances de l'homme raisonnable. Il devoit ce goût d'aprétiation à une anecdote de son Enfance, à une leçon de ses sœurs sur l'achat d'un siflet qu'il avoit payé trop chèrement. L'originalité piquante de la lettre où lui même raconte cette petite historiette à une Dame de ses amies démontre jusqu'à quel point les plus légers événemens servent dans notre Enfance à modifier nos habitudes. En lisant les Mémoires de Franklin, on est disposé à croire que personne ne fut plus que lui soumis à l'empire du hazard, mais qu'aussi personne ne fut plus habile à en profiter.

On le voit très jeune encore abandonner Boston sans autre projet que de fuir sa famille et la tirannie d'un oncle qui l'accabloit de mauvais traitemens. Il arrive à Philadelphie presque mourant de faim, sans moyens de se procurer le nécessaire, y devient amoureux d'une femme qu'il n'épouse que lontems après faute d'un peu de fortune. Des travaux pénibles l'aident à vivre. Mais dupe de son associé, il s'embarque pour l'Angleterre, se fait ouvrier d'Imprimerie et employe le reste de ses momens libres à visiter les atteliers des arts et à rechercher les conversations des sçavans. Sa provision de connoissances faite, il retourne en Amérique, vend des Livres, rassemble des hommes instruits, dirige leurs travaux, et fait avec eux des souscriptions pour fonder des établissemens utiles.

Des papeteries sont établies avec le produit des petits almanachs destinés à répandre les lumières parmi ses compatriotes. Des Bibliothèques se forment et chaque Citoyen, moyennant une légère rétribution qui sert à l'achat de nouveaux livres, s'empresse à la fin de de sa journée de travail d'aller s'y instruire. C'est par ces moyens qu'il propageoit les lumières, qu'il élevoit insensiblement ses concitoyens à la dignité d'un peuple libre et qu'il préparoit dans son pays, une révolution qui servira d'example à tous les peuples jaloux de reconquérir leurs droits.

Il est inutile de rappeller ici tout ce qu'il a fait en Angleterre et en France pour la liberté de l'Amérique. Ces détails sont ailleurs, quelques anecdotes les moins connues de sa vie privée intéresseront davantage, surtout si elles ajoutent à la connoissance du caractère d'un homme marqué de traits particuliers qui le distinguent des plus grands personnages qui ont figuré dans le monde ancien et moderne.

Franklin vivoit dans la retraite à Passy, recevant tout le monde, et ne conversant familièrement qu'avec un très petit nombre d'amis. L'envie de plaire à une nation qu'il vouloit rendre amie de la sienne, l'obligeoit à ne refuser aucune des invitations qu'on lui faisoit.

Dans une nombreuse société, il parloit peu et mettoit même peu d'empressement à écouter les conversations. Il répondoit à ses amis qui lui en demandoient la raison, "Si vous autres Français ne parliez que quatre à la fois, je pourrois comprendre et je ne sortirois pas si souvent d'une bonne compagnie, sans sçavoir ce qu'on y disoit."

Il étoit due bon air d'avoir Franklin à diner, de lui donner des fêtes. Les femmes surtout s'empressoient de le visiter, de lui parler des heures entières, sans s'apercevoir qu'il les comprenoit peu, faute d'usage de notre langue. Malgré le tems qu'elles lui faisoient perdre, il les accueilloit avec une sorte de coquetterie aimable qui plaisoit à toutes. Quand chacune en particulier, jalouse de ses préférences, lui demandoit, s'il ne l'aimoit pas plus que les autres. "Oui, disoit-il, quand vous êtes la plus près de moi, en raison de la force d'attraction."

Sa meilleure amie, celle chez qui il se livroit le plus volontiers à une conversation libre et amusante et où il aimoit à passer le tems que lui laissoient les affaires, la Ve d'Helvétius le faisoit peindre chez elle. "Amusez moi, disoit-il à ses amis, ou vous aurez de moi le plus triste des portraits."

Pour le distraire agréablement, on lisoit des recueils de bons mots, de ceux surtout qu'il préféroit, où le sel de la plaisanterie cache toujours un résultat philosophique. Il n'en laissoit passer aucun sans y répondre par un autre du même genre. ce qui suposoit à son âge une prodigieuse mémoire de faits et d'anecdotes parmi lesquels il n'avoit qu'à choisir pour les

placer à propos et toujours à l'apui d'une maxime utile de conduite.

C'est avec les jeunes gens qu'il aimoit à raconter des historiettes propres à leur inspirer des goûts simples et naturels. Comme il n'avoit rien oublié de ce qui avoit le plus intéressé un esprit observateur comme le sien durant le long cours d'une vie très active, il pouvoit sans se répéter, ainsi que le font les vieillards, animer une conversation par des traits saillans qu'il devoit approprier à tous les âges, à tous les esprits. Cette fécondité, cette souplesse, caractère de son génie particulier, rendoit son commerce très attachant.

Il demandoit à un jeune homme qui partoit pour l'Italie, ce qu'il y alloit faire. "—Y voir, disoit-il, la patrie des arts et des talens.—Les avez-vous cultivés? —Nullement. C'est pour cela que je pars—Connaissez-vous les chef d'œuvre de votre pays—Non. Je les verrai à mon retour après que je me serai instruit en voyageant.—Vous ne sçavez donc pas, mon enfant, que si vous n'êtes instruit de rien, vous áprendrez peu de choses. Il faut converser pour aprendre. La conversation n'est qu'un commerce d'échange. Qui n'y met rien, n'en retire rien. Si vous ne sçavez pas même questionner à propos, croyez vous que des hommes éclairés s'amuseront à vous faire part de leurs connaissances, s'ils n'en recoivent aucune de vous? Pour voir des monumens, il ne faut que des yeux. Pour les aprétier, il faut un jugement exercé par des comparaisons et éclairé par de bonnes études."

Un neveu des amis de Franklin, sortant du collège, l'étant allé voir et lui témoignant le désir d'obtenir de son oncle un meuble inutile, le Philosophe lui conta qu'un Quakre de ses amis, ayant bâti une maison l'invita à l'aller voir. "Je fus d'abord frappé, disoit-il, de la grandeur des apartemens. Le Quakre vivoit solitaire, et recevoit rarement du monde. Quand je lui demandois, à quoi bon une si grande antichambre? Vous n'avez qu'un seul domestique. C'est égal, j'en ai le moyen. A chaque pièce de la maison, à chaque chose étrangère à ses besoins, même question, toujours même réponse. Arrivé à une vaste salle à manger, j'y vois une grande et belle table de bois de Moegani, où 25 personnes pouvoient s'asseoir à l'aise. Pour cette fois, lui dis-je, qu'avez vous besoin d'une si grande table? Il ne cessa de répondre, c'est égal, j'en ai le moyen. Dans ce cas lui répondis-je, que n'avez vous un chapeau de cette ampleur. Vous en avez le moyen. Voilà ajoutoit Franklin, la source de la déraison des hommes qui occupés de besoins factices, négligent des jouissances réelles. Nous n'avons que cinq sens, aisés à satisfaire. Pour celui de la vue, il n'en coûte, lorsqu'on vieillit qu'une paire de lunettes. Ce qui nous ruine, ce sont les yeux des autres. C'est pour les autres qu'on s'habille richement, qu'on se loge, qu'on se meuble avec somptuosité, qu'on étale ses bijoux, qu'on soudoye des laquais inutiles, et qu'on se fait traîner quoiqu'avec de bonnes jambes, dans un magnifique équipage attelé de 8 fort chevaux."

En se retranchant ainsi tous les besoins factices de la vanité, Franklin sçavoit mieux employer son tems à remplir sa destination d'homme, à se rendre bon et heureux, à devenir utile à ses semblables. Chargé d'affaires importantes, sans négliger les plus petites, il avoit contracté l'habitude de n'en laisser aucune en arrière. Sa santé lui permettoit de travailler quelquefois 8 jours de suite, sans prendre d'autre repos qu'un peu de sommeil sur son fauteuil. Quand la fatigue l'avoit endormi une heure ou deux, il retrouvoit disoit-il une nouvelle matinée, dans une disposition nouvelle au travail.

Il avoit durant sa jeunesse trempé son corps par un fréquent exercice de la natation. Chaque jour qu'il avoit de libre, il le passoit à nager dans la mer, avec ses jeunes camarades de Boston qu'il excitoit à l'imiter. Pour essayer ses forces, et connaître jusqu'à quel point elles le soutiendroient sur l'eau s'il venoit à faire naufrage en voyageant, il racontoit que le dos chargé d'une valise de 30 livres pesant, il avoit souvent parcouru l'espace de 3 lieues à la nage sans accident et sans fatigue, A l'âge de près de 80 ans il alloit encore de grand matin sur le bord de la Seine, vis à vis Passy, aprendre à nager à un de ses petits fils, en traversant avec lui la rivière d'un bord à l'autre.

Ministre plénipotentiaire, obligé pour les intérêts de son pays d'entretenir une vaste correspondance dans toute l'Europe, un seul Secrétaire lui suffisoit. Son esprit d'ordre abrégeoit et simplifioit tout. "Je ne m'étonne pas, disoit-il, si les Ministres en France éprouvent tant de difficultés à terminer les moindres affaires avec un si grand attirail de Bureaux et de Comis. Ils ne font que les compliquer au point de les rendre interminables ou de lasser la longue patience du Solliciteur. Aussi voit-on vos gouvernans employer plus d'art à les différer, qu'il ne faudroit de tems pour les finir."

Connaissant tout le prix de la vie qu'il n'aimoit à perdre ni en paroles, ni en démarches inutiles, Franklin avoit obtenu du Ministre Vergennes de ne traiter qu'avec lui seul des intérêts de son pays. Les raisons exposées de part et d'autre avec franchise, de vive voix, ou par écrit, terminoient plus d'affaires en un jour que les Bureaux n'en expédioient en 6 mois. Malgré son désir d'épargner le tems, il lui en étoit beaucoup dérobé par ceux que la simple curiosité amenoit chez lui. Il portoit même la complaisance jusqu'à répondre à des demandes bizarres et singulières dont on ne craignoit pas de l'importuner.

Un Gentilhomme du Perche lui écrivit un jour qu'il voyoit bien que l'Amérique ne pouvoit se passer de Roi; que lui, d'une antique noblesse qui remontoit jusqu'à Guillaume le Conquérant, avoit tout ce qu'il croyoit nécessaire pour bien gouverner, qu'il lui offroit tous ses services, et que s'il ne pouvoit déterminer le Congrès à les accepter, il se contenteroit du titre de Roi avec une pension de 15 mille livres, en restant dans sa Province et permettant aux Américains de se donner tel gouvernement qu'il leur plairoit. Franklin

s'amusoit beaucoup de pareilles lettres et ne manquoit pas d'en divertir ses amis.

Des avanturiers de toute espèce venoient le solliciter de les faire passer en Amérique avec des lettres de recommandation. "De quoi une lettre vous serviroit-elle, leur disoit-il, quand je ne vous connois pas plus que les personnes à qui je vous adresserois?" Il aimoit beaucoup la lettre d'une femme de la Cour qui lui recommandoit un jeune homme de famille à peu près dans ces termes. "M. si dans votre Amérique on a le secret de rendre meilleur un sujet détestable qui fait le tourment de sa famille, je vous prie d'y envoyer celui qui vous portera cette recommendation. Vous ferez un miracle digne de vous. Vous obligerez, etc." Le jeune homme partit et fut tué en brave dans une bataille.

Pour honorer notre siècle et la nation, je dirai que l'enthousiasme des Français pour Franklin étoit extrême. Tous les hommes éclairés le recherchoient. Les plus jolies femmes briguoient même en public l'avantage d'embrasser ce vénérable vieillard sur la tête de qui reposoient tant de grands souvenirs de services rendus à l'humanité. La Cour tout en servant sa cause, ne voyoit pas du même œil l'ami de la liberté. La cy-devant Reine qui étoit bien loin de soupçonner tant de génie sous des dehors modestes, d'une si grande simplicité, s'étonnoit de le voir parmi les ministres décorés des grandes puissances de l'Europe,

Un jour qu'elle demandoit à un Courtisan ce qu'avoit été Franklin dans son pays avant d'en être l'ambassadeur: "Prote d'imprimerie, lui dit-il." "Il est vrai, dit un autre plus sensé. En France, il eût été Libraire tout au plus."

La Paix faite et la liberté américaine assurée, Franklin s'aprêtoit à retourner dans sa Patrie, malgré les douleurs d'une cruelle incommodité qui faisoit croire à ses amis qu'il ne pût soutenir les fatigues du voyage et d'une longue traversée de mer. La V.e d'Helvétius qu'il affectionnoit particulièrement, le pressoit de rester en France, de s'y faire opérer par des mains habiles, et de finir ses jours auprès d'elle avec des amis qui le chérissoient.

D'un autre côté, Jefferson son ami et son successeur en France, disoit: "Si j'avois le malheur de voir ce grand homme rester ici et succomber à l'opération qu'on lui propose, je n'aurois de parti à prendre, pour le bien de notre pays, que de l'y faire transporter dans son cercueil, convaincu que la seule présence de son corps acheveroit d'y consolider notre révolution."

Malgré les instances qu'on lui faisoit de rester, l'homme qui avoit déjà bravé tant de dangers pour servir sa patrie et la cause de la liberté, n'en demeuroit que plus ferme dans la résolution d'aller lui sacrifier encore les derniers instans qui lui restoient à vivre. "Vous ne faites, répondoit-il à ses amis, que me rendre mon départ plus douloureux. N'ajoutez pas à mes regrets. Soutenez plutôt le courage dont j'ai besoin pour vous quitter. Ma tâche n'est pas achevée. Le peu qui me reste de vie je le dois à ceux qui m'ont confié la leur. Je souffre, il est vrai, mais la nature, qui m'a si bien traité jusqu'ici, me laissera sûrement le tems de répondre aux vœux de mes concitoyens. Si je guéris, après avoir satisfait à tous mes devoirs envers ma patrie, mon plus grand bonheur sera de finir mes jours dans un pays où j'ai goûté tant de jouissances parmi les hommes les plus éclairés de l'Europe."

On pouvoit juger de la sincérité de ses regrets par les larmes qui rouloient dans ses yeux. D'ailleurs ses paroles étoient toujours la véritable expression de ses sentimens. S'il croyoit prudent de taire quelquefois ses opinions, il ne les déguisoit jamais. L'extrême finesse de son esprit ne confinoit point à la dissimulation. Il avouoit qu'il n'avoit trompé le ministère anglois qu'en disant toujours la vérité et que la guerre d'Amérique n'auroit jamais eu lieu, si l'on n'avoit pas cru le contraire de ses réponses au Conseil du Roi à la barre du Parlement.

L'âge ne lui avoit rien fait perdre de la sensibilité de son âme. Un jour qu'il se promenoit avec un ami dans le Bois de Boulogne, en lui parlant d'un de ses enfans mort âgé de 7 ans, il y avoit une quarantaine d'années, des pleurs couloient de ses yeux. "Ne soyez pas surpris, dit-il à son ami, de la douleur que me cause encore une perte si ancienne. Hélas! Je m'imagine toujours que ce fils eût été le meilleur de mes enfans."

Note on a small piece of paper pasted at the bottom of the last page:

L'on sçait que le seul fils qui lui restoit avoit passé lors de la révolution dans le parti des Anglois, et qu'ensuite fait prisonnier, il ne dut sa liberté qu'à l'extrême considération dont jouissoit son Père.

BENJAMIN FRANKLIN AND THE TRANSIT OF MERCURY IN 1753

Together with a Facsimile of a Little-known Scientific Work Printed by Franklin*

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In the course of my investigation of the scientific career of Benjamin Franklin, I found among the Franklin material collected by Jared Sparks, and at present in the Harvard Library, a four-page pamphlet relating to the transit of Mercury that occurred in 1753. Hitherto, the only source of information concerning this pamphlet has been a footnote written by Sparks for his edition of *The Works of Benjamin Franklin*.[1] On the basis of the information collected by Sparks, A. H. Smyth, in his edition of *The Writings of Benjamin Franklin*, wrote a short note giving the title of the work.[2] Smyth copied Sparks's transcription of the title, as *"Letters relating to a Transit of Mercury over the Sun, which is to happen May 6th, 1753."* That Smyth actually copied the title from Sparks may be seen from the following facts: (1) Sparks made an error in transcription [". . . *a Transit of Mercury* . . ." rather than ". . . *the Transit of Mercury* . . ."], an error not likely to have appeared also in Smyth had the latter taken his title from the original, (2) Smyth quoted the title in italics, as well as enclosing it within quotation marks, just as it appeared in Sparks, although this was not Smyth's custom in other citations, (3) Smyth declared that the letter to which his note was appended was "First published by Sparks." Smyth's note reads:

> The paper alluded to, of which fifty copies were struck off for distribution, was entitled, *"Letters relating to a Transit of Mercury over the Sun, which is to happen May 6th, 1753."*—Ed.

In Campbell's "Short-Title Check List of all the Books, Pamphlets, Broadsides, &c., known to have been printed by Benjamin Franklin," the title is given as in Smyth and Sparks, with a reference to "Smyth's Franklin, vol. 3, p. 122. Not in Hildeburn. tc." The letters "tc" signify that the "full title or collation is unknown."[3] As Campbell's note indicates, this publication is not mentioned in Hildeburn's *Issues of the Press of Pennsylvania*. Curiously enough, had Campbell consulted Sparks for his information rather than Smyth, he would have learned that the collation is as follows: "It consisted of four large folio pages. . . . A manuscript drawing was also attached to each copy, showing the line in which Mercury would pass over the sun's disc." This example well illustrates the need for consulting Sparks as well as Smyth whenever investigating a question concerning Franklin, for not only are there many documents contained in Sparks not to be found in Smyth, but there are also many interesting and important notes written by Sparks that are of inestimable value.

Yet another reference (in print) to this pamphlet occurs in Charles Evans, *American Bibliography* (Chicago, 1905; vol. 3, 1751–1764). The title is given correctly although Evans did not know that Franklin was the printer. A single copy is located at the Massachusetts Historical Society. However, following the title, one finds "[Boston: 1753]" signifying that although the place of publication was not stated explicitly on the pamphlet, it was published in Boston; actually, it was printed in Philadelphia, and by Benjamin Franklin. Next, Evans gives the pagination as "pp. [4]" which, in the style of his book, may mean 4 unnumbered pages, whereas this pamphlet is paginated "[1]"; "[2]"; "[3]"; "[4]"; followed by a page devoted to a manuscript drawing. In Worthington C. Ford's *Broadsides, Ballads, &c. printed in Massachusetts 1639–1800* (Boston, 1922, Mass. Hist. Soc. Coll. **75**), this pamphlet is attributed to John Winthrop, Hollis Professor of Mathematics and Natural Philosophy at Harvard

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[1] **6**: 159 ff., Phila., Childs & Peterson, revised ed., 1840.

[2] **3**: 122, N. Y., Macmillan, 1907.

[3] Pages 185–332 of William J. Campbell, *The collection of Franklin imprints in the museum of the Curtis Publishing Company; with a short-title check list of all the books, pamphlets, broadsides, &c., known to have been printed by Benjamin Franklin*, Phila., Curtis Publ. Co., 1918.

College; although Ford does not give a place of publication, the inclusion of this pamphlet in the volume indicates that it is supposedly a Massachusetts imprint. Finally, in Joseph Sabin's *Bibliotheca Americana* (28, N. Y., 1936, ed. by R. W. G. Vail), the pamphlet is also attributed to Winthrop and the place of publication is given as Boston. Thus, this pamphlet printed by Franklin in Philadelphia has been often described, but never correctly.

Franklin described the pamphlet in a letter to James Bowdoin written from Philadelphia 28 February 1753, which reads in part:

> The enclosed is a copy of a letter and some papers I received lately from a friend, of which I have struck off fifty copies by the press, to distribute among my ingenious acquaintances in North America, hoping some of them will make the observations proposed. The improvement of geography and astronomy is the common concern of all polite nations, and, I trust, our country will not miss the opportunity of sharing in the honor to be got on this occasion. The French originals are despatched by express overland to Quebec. I doubt not but that you will do what may lie in your power, to promote the making these observations in New England, and that we may not be excelled by the American French, either in diligence or accuracy. We have here a three-foot reflecting telescope, and other proper instruments; and intend to observe at our Academy, if the weather permit. You will see, by our Almanac, that we have had this transit under consideration before the arrival of these French letters.[4]

Franklin's letter to Bowdoin mentions the fact that the "French originals are despatched by express overland to Quebec." According to Sparks's note, a translation of the French documents

> was made in New York under the direction of Mr. James Alexander, who sent them to Franklin. The French astronomers were desirous, that observations of the transit should be taken at Quebec. M. de Lisle, of the Academy of Sciences, drew up a memorial containing instructions for the purpose. This memorial, with letters from M. La Gallissonière, dated at Paris, October 10th, 1752, was sent unsealed to the governor of New York, with a request that they might be forwarded over land to Quebec. The governor put the papers into the hands of Mr. Alexander, who caused a translation to be made. The originals were then dispatched to Quebec. To the translation, which was printed and distributed by Franklin, was prefixed a long and interesting letter from Mr. Alexander on the subject of the transit. He also communicated a copy of all the papers to Cadwallader Colden.[5]

The concluding sentence of the paragraph in Franklin's letter to Bowdoin refers to *Poor Richard improved; Being an Almanack and Ephemeris . . . for the Year of our Lord 1753.* Under the heading "ECLIPSES, 1753," Franklin described the coming phenomenon as follows:

> On *Sunday*, the 6th Day of *May*, in the Morning, the Planet *Mercury* may be seen to make a black Spot in the *Sun's* Body, according to the following Calculation.
>
> [*The "Calculation" and "Elements" of the transit as printed by Franklin are omitted.*—I. B. C.]
>
> The astronomical Time when *Mercury* goes off the *Sun*'s Disk, being reduced to common Time, is *May* the 6th, at 31 min. after Seven in the Morning. The *Sun* rises at 1 min. past Five, and if you get up betimes, and put on your Spectacles, you will see *Mercury* rise in the *Sun*, and will appear like a small black Patch in a Lady's Face.
>
> [*This is followed by a diagram showing the path of Mercury as it crosses the Sun's disc.*—I. B. C.] [6]

The pamphlet printed by Franklin on the occasion of the transit, and reproduced in facsimile at the end of this article, is made up as follows: pages "[1]" and "[2]" contain the letter from James Alexander to Franklin of 26 January 1753, printed without date and without Alexander's name; at the bottom of page "[2]" and continuing through the top of page "[3]" are "TRANSLATIONS *of the Letters,* &c. *from* Paris," first the letter from La Galissonnière, dated Paris, 10 October 1752, printed with the date, but without La Galissonnière's name, followed by La Galissonnière's letter of the same date "*To the Reverend, Reverend Father,* Bone Camp, *Jesuit, at* Quebeck," printed without La Galissonnière's name; the remainder of page "[3]" and all of page "[4]" are devoted to the "MEMORIAL, *mentioned in the last. The Passage of* MERCURY *upon the* SUN, *on the 6th of* May, 1753, *to observe in* Canada." It will be noted that Franklin's title for the whole pamphlet refers to the "transit of Mercury over the Sun," whereas Alexander's translation of the "memorial"

[4] Transcribed from Sparks (reference 1).

[5] Sparks's note (reference 1).

[6] This issue of *Poor Richard improved,* of great interest since it also contains Franklin's first published account of his newly invented lightning rod, is reproduced in facsimile on pages 225–260 of Frank Luther Mott and Chester E. Jorgenson, editors, *Benjamin Franklin: representative selections, with introduction, bibliography, and notes,* American Writers Series, N. Y., etc., Amer. Book Co., 1936.

is a literal rendering, "passage of Mercury upon the Sun." (The reason for the suppression of the names of the correspondents will presently be made evident from Alexander's correspondence.)

The memorial concerning the transit had been drawn up by Joseph-Nicolas Delisle [or De l'Isle], astronomer, naval geographer, Professor of Mathematics in the Collège Royal de France,[7] and had been sent by Roland-Michel Barrin, marquis de la Galissonnière, whose distinguished career embraced the posts of Lieutenant général des armées navales and Gouverneur général du Canada.[8]

A letter from Alexander to Franklin, dated New York 29 January 1753, makes clearer the circumstances under which Alexander made his translation. It also explains that the omission of La Galissonnière's name was a condition of the "Leave" given to print the documents.

> About a week ago the papers whereof that herewith Mark't A is a Translation were sent to Peruse, and on my returning them With a Translation I beged Leave to Communicate Coppies of them to You and Dr Colden with Liberty if you thought proper to print them or any Part of them. In Answer To which I obtained the Leave coppied at the end of Them. and Struck out La Galissonière's name, for the reason in the Leave
>
> The Delay of that Leave put me upon dipping into the Abridgment of the Philosophical Transactions to see what there said of the matters in those papers, and from thence I made the Extracts in the paper Herewith Mark't B, by which I find that that which had baffled all the Art of man hitherto To discover with any Tolerable Certainty (Viz: the Suns Distance from the Earth) may with great Certainty be Discovered by the Transit of Venus over the sun the 26 of May 1761 old stile if well Observed in the East Indies and here and there Observations Compared Together.
>
> It Would be a great honour To our young Colledges in America if they forthwith prepared themselves with a proper apparatus for that Observation and made it. Which I Doubt not they would Severally Do if they were Severally put in mind of it and of the great Importance that that Observation would be To Astronomy and that the missing that One Observation cannot be retrieved for 250 years To come
>
> You have on so many Occasions Demonstrated Your Love to Literature and the good of Mankind in General that I thought no person so proper as your self to think of the ways and means of persuading these Colledges to prepare themselves for takeing that Observation and in order to it you may make what use you please of the papers herewith, only not my name [9]

It is clear from this letter that Alexander thought of having observations made of the transit of Mercury chiefly to arouse interest in the transit of Venus of 1761 and to afford practice for that latter observation. The importance of an observation of the transit of Venus in the middle of the eighteenth century can hardly be exaggerated. Newtonian mechanics, founded on Kepler's laws of planetary motion, had been expressed in terms of the relative distances of the planets from the sun. In other words, discussions of the planets, Mercury, Venus, Mars, Jupiter, and Saturn never referred to the actual distances of these planets from the sun, say in miles or feet, but rather to their distances from the sun compared to the earth's distance from the sun. Thus, if the earth's distance from the sun were taken arbitrarily at 1,000 units, then Mercury's distance from the sun was reckoned at 387, and Venus's at 723.[10] Hence, if it were possible to determine the solar parallax—the angle subtended at the sun by the earth's radius—one could compute first the actual distance from the earth to the sun, and then the actual distances of the several planets from the sun. A method for determining the solar parallax, usually attributed to Edmond Halley, used observations, made at different places on the earth, of the time in which Venus was seen to cross the face of the sun. This phenomenon, a transit of Venus across the sun, is an infrequent occurrence. Since 1600, transits of Venus have occurred in 1631, 1639, 1761, 1769, 1874, and 1882. The next pair will be in 2004 and 2012. The transit of 1631 occurred during the night, and that of 1639 was imperfectly observed. Hence in 1761, there occurred one of a pair of events, to be repeated in eight years, and then not again for some 120 years more, of supreme importance for astronomical science.

Franklin himself was well aware of the importance of the transit of Venus, even before receiving Alexander's letter. In *Poor Richard improved* for 1753, the reader was told that the moon is suffi-

[7] *Cf. Les membres et les correspondants de l'Académie royale des sciences*, published by the Académie des sciences de l'institut de France, Paris, 1931.

[8] *Ibid.*

[9] Colden Papers, **4**: 367–368, *N. Y. Hist. Soc. Coll.*, 1920. Alexander's earlier letter to Franklin, dated 26 January 1753 forms the first item in the pamphlet reproduced in facsimile at the end of this article; another version of this letter, made from a copy, may be found in Colden Papers **4**: 363–367.

[10] As in 'sGravesande's *Elements of natural philosophy*, Englished by J. T. Desaguliers, **2**: 155, London, ed. 2, 1726.

ciently close to the earth to yield "a very sensible Parallax" and thus astronomers "know certainly the Distance of the Moon from the Earth, *viz.* 240 thousand Miles. . . ." After declaring that the sun's distance from the earth is "at least, . . . eighty Millions of Miles," *Poor Richard* continues,

> but it is not certainly known, whether it is not a great deal more. In the Year 1761, the Distance of all the Planets from the Sun will be determined to a great Degree of Exactness by Observations on a Transit of the Planet *Venus* over the Face of the Sun, which is to happen the 6th of *May*, O.S. in that Year.[11]

When the transit of Venus actually occurred, the most notable American feature of that event was Harvard Professor John Winthrop's voyage to Newfoundland aboard the Province sloop, furnished for that purpose by Massachusetts's Governor Bernard—the first scientific expedition to be sponsored by a college in America—which provided the only American observation of the transit of 1761.[12] Mercury is too close to the sun to yield the solar parallax; the transit of Mercury merely served as a check on planetary computations and as a means of checking longitude determinations.

Alexander sent copies of the documents relating to the transit to his friend Cadwallader Colden as well as to Franklin, expressing the hope that Colden

> . . . could be here Some days before the 6th of May next to assist in prepareing things for the observing the transit of Mercury over the Sun then, and in makeing the observation, for Except your Self & me, I believe there's none in the province any way acquainted with observations of that kind, and our observing that transit might show some young men how to observe the transit of Venus in 1761.[13]

Franklin, meanwhile, was preparing to observe the transit in Philadelphia. On 28 February 1753, he told Colden that "We are preparing here to make accurate Observations on the approaching Transit of Mercury over the Sun," and asked for certain information.[14] On 12 April 1753, he wrote to Colden thanking him "for the Hints concerning our Observation of the Transit. I wish we may have fair Weather for I think nothing else will now be wanting."[15]

The English scientists were anxious to receive observations from the New World. Peter Collinson, friend and patron of Franklin, John Bartram, and Colden, wrote to the latter from London on 2 June 1753, that "Wee hope to be favour'd with your observation on the Transit of Mercury."[16] On 1 Sept. 1753, Collinson wrote again to Colden, saying, "I have no Letter Since yours of February 16 pray did you make any observations on the Transit of Mercury"?[17]

Alexander received the pamphlet printed by Franklin in March 1753, and wrote to Colden on 4 March:

> Yesternight I received by the post, some printed Coppies of the Letters concerning the transit of Mercury one of which I Send you herewith. . . .
>
> Mr. Franklin writes that he has struck off fifty coppies of the Letters, & by this post Sends same to Jersey & New England & by next Southern post will Send some to Maryland & Virginia all with pressing Letters from himself to provide for observing the transits mentioned within—I hope your affairs may permitt you to give us your assistance here on May 6th next.[18]

Alas! Alexander's preparations came to nought and he wrote, sadly, to Colden on 10 May 1753, "I had this day the favour of yours of the 6th the clouds debarred u[s] here of the Light of the transit of Mercury thoug we were pretty well prepared for the observation."[19]

Franklin himself had no better luck. I have been unable to find Franklin's account of his own attempt to observe the transit. Yet Peter Collinson heard about it and also about Franklin's endeavors to obtain observations from others. In a letter dated 12 August 1753 (or 1754), Collinson wrote to Franklin that he was disappointed at the bad luck that attended the transit of Mercury, adding that Franklin's zeal to promote that observation could not be enough commended.[20] Further-

[11] See reference 6.

[12] For a full account of Winthrop's Harvard expedition to observe the transit of Venus, see Chapter 2 of I. Bernard Cohen, *Some early tools of American science; an account of the early scientific instruments and mineralogical and biological collections, with notes on their use in teaching and research*, Cambridge, Harvard Univ. Press, 1950.

[13] Colden Papers **4**: 368.

[14] Colden Papers **4**: 373.

[15] Colden Papers **4**: 382.

[16] Colden Papers **4**: 392.

[17] Colden Papers **4**: 405.

[18] Colden Papers **4**: 375–376.

[19] Colden Papers **4**: 388.

[20] Manuscript unpublished letter in the American Philosophical Society Library, Franklin Papers, **69**: 65. My description of its contents is taken from I. Minis Hays, editor, *Calendar of the papers of Benjamin Franklin in the Library of the American Philosophical Society* **1**: 6, Phila., Amer. Philos. Soc., 1908. Hays gives the date as 1752 which is clearly erroneous since the letter refers to the failure to have observed a transit which occurred in 1753.

more, in a letter from Alexander to Colden, dated 30 July 1753, we find

> I rec'd by this post from Mr. Franklin who is now at Boston a Coppy of an observation of the transit of Mercury at Antigua which I believe is the only one in the British Colonies—of which inclosed is a Coppy —I found in the Boston Evening post of July 23d an observation of the same at London of which inclosed is also a Coppy.[21]

The single observation referred to by Alexander was made in Antigua by William Shervington (or Shewington) or perhaps by Captain Richard Tyrrel.[22] The letter which follows, apparently representing the only observation of the transit made in British America, is reprinted from the *Philosophical Transactions*, the official journal of the Royal Society of London. The two notes in italics are included in the *Philosophical Transactions*.[23]

XLVIII. *A Letter of Mr.* William Shervington *to* Benjamin Franklin, *Esq; of* Philadelphia, *concerning the* Transit *of* Mercury *over the* Sun, *on the* 6 *of* May 1753, *as observed in the Island of* Antigua: *Communicated by Mr.* Peter Collinson, *F. R. S.*

S I R, Antigua, June 20, 1753

Read Nov. 15, 1753

Mr. Benjamin Mecom having received half a dozen circulatory letters from you relating to Mercury's transit over the sun the 6 of last May, he put them into my hands. One would have sufficed for our island, as we are not overburthend with men, who have a taste that way. Hereunder I send you the result of my observation thereof.[24]

Sunday, May 6, at 6^h 7′ 51″, I observed the western limb of Mercury to touch the western limb of the sun; and, at 6^h 10′ 37″, he touch'd the same with his eastern limb, and totally disappear'd. Lat. of the place 17° 0′ N. Lon. by estimation 61° 45′ W. from London.

This was taken by a Graham's watch, and corrected by two altitudes taken by a most exquisite quadrant; *viz.*

At 6^h 58′ 7″ I observed the distance of the sun's upper limb from the zenith = 72° 21′ 30″. And, at 9^h 31′ 5″, I observed the same = 36° 17′ 0″.

By the common process (which you may have, if necessary) I found the watch was 0° 4′ 4″ 28‴ too fast,[25] therefore,

	h	′	″	‴
From	6	10	37	
Take	0	4	4	28
True appart time of Merc^{y}. exit here,	6	6	32	32

Pray impart your observation to
Your Well-Wisher,
WILLIAM SHERVINGTON.

Clearly the total effect of Franklin's activity in printing and distributing the pamphlet on the transit of Mercury did not greatly advance our knowledge of the universe. We see, however, in this story yet another example of Franklin's general interest in all branches of science and his zeal in advancing the cause of science by his personal efforts whenever the occasion offered itself. Franklin's double role in the development of science on the American continent consisted first, of adding to knowledge by his own penetrating research and second, of stimulating others to do research, organizing scattered individual scientific efforts so that they might become more effective, and transmitting scientific information to his countrymen and his fellow-scientists abroad.

BIBLIOGRAPHICAL NOTE

The example of the pamphlet on the transit in the Sparks Collection[26] in the Harvard Library consists of four printed pages and a hand-drawn

[21] Colden Papers **4**: 402.

[22] The copy of this letter transcribed in Colden Papers **4**: 393–394, spells the name as "Shewington," whereas the letter as published in the *Philosophical Transactions* spells the name as "Shervington." As to whether Shervington (or Shewington) was merely a bystander or the actual observer, see note 24 accompanying the letter immediately below.

[23] *Philosophical Transactions* **48** (1): 318–319, for the year 1753, London, 1754.

[24] *Dr. Charles Rose, who was in Antigua at this time, says that these observations were taken by Capt. Richard Tyrrel, of the said island, and who is possessed of a valuable collection of astronomical instruments, made by Mr. Bird in the Strand, London, and that Mr. Shervington only was present.* [Note from *Phil. Trans.*—I. B. C.]

[25] *Mr. Shervington has taken the mean of these two altitudes from the error of his watch; and there can be no doubt that his observation is a good one, which, compared with that made in Surry-Street by Mr. Short,* p. *199,* l. *1.* &c., *fixes the longitude of the place of his observation in Antigua* 4^h 5′ 30″, *or* 61° 22′ 30″ *west of St. Paul's, London.* [Note from the *Phil. Trans.* The reference to "page 199, line 1, &c." signifies an article in the same volume of the *Phil. Trans.*, pp. 192–200, by Mr. J. Short on the observations of the transit of Mercury made by him in London.—I. B. C.]

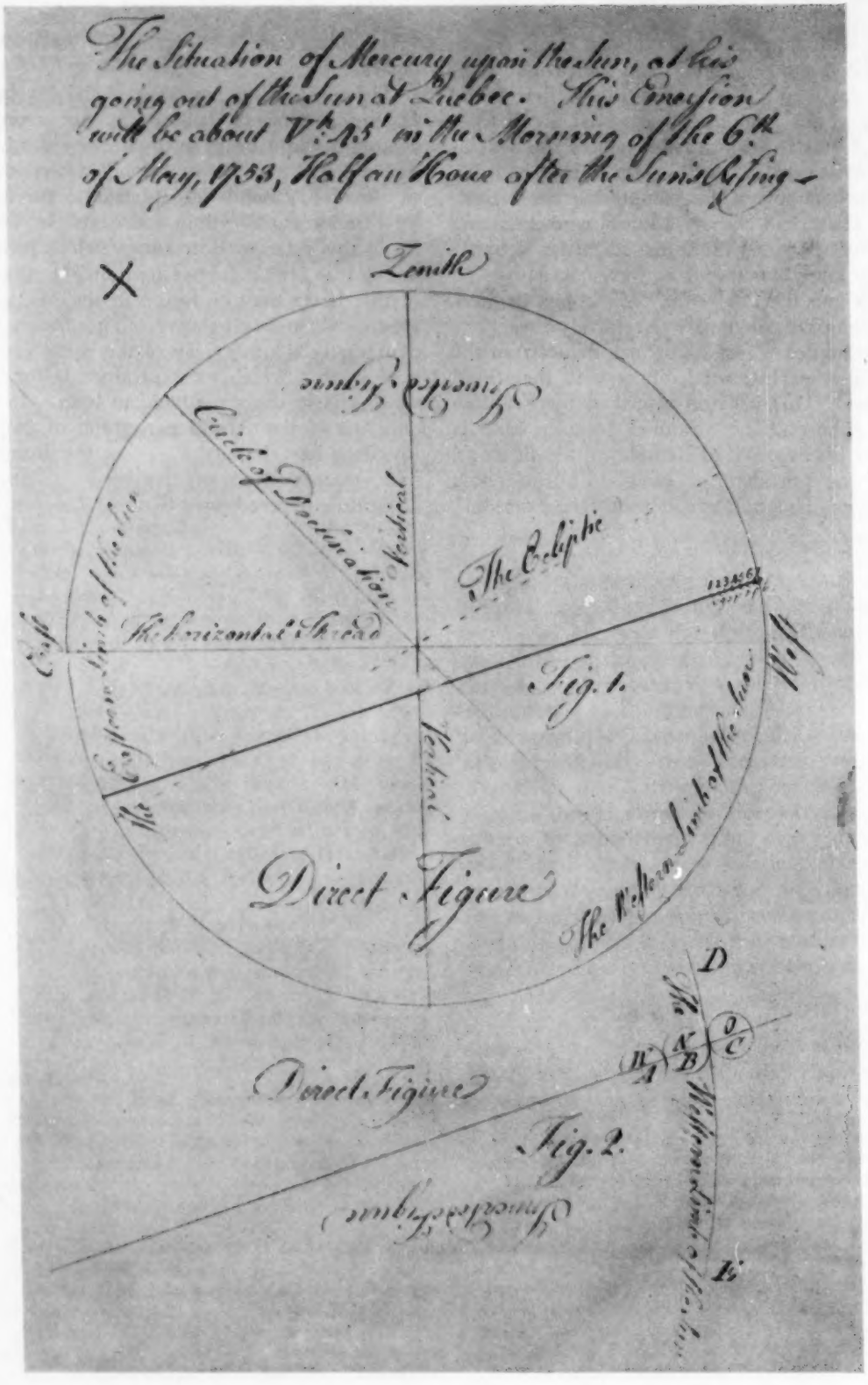
[26] It may be found at the very end of a bound volume with the call number "MS Sparks, 49, vol. 3."

diagram with longhand annotations. The pages measure 20.5 cm × 33.0 cm, and the printed lines are 13.5 cm long. Some time after I first found this copy of the pamphlet, I received a call from the late Allyn B. Forbes, Librarian of the Massachusetts Historical Society. Mr. Forbes had discovered an example of this pamphlet in the Massachusetts Historical Society Library and, knowing of my interest in Franklin's scientific activity, wished to know whether I had ever actually seen a copy. Since there were only fifty copies printed, the pamphlet was obviously excessively rare.

The facsimiles which follow are made from the example in the Harvard Library with their kind permission. This copy is inscribed by Franklin to "Dr. Johnson," i.e., Samuel Johnson who is known for his espousal of Berkeleyan idealism and who became president of King's College (now Columbia). The notation "from Dr. Franklin" "50 copies only were printed" was written by Sparks.

The copy of this pamphlet in the Massachusetts Historical Society Library is not inscribed by Franklin, but it bears in the upper right-hand corner of page "[1]" the notation "James Bowdoin's" in Bowdoin's hand. Thus, this is the copy sent by Franklin to Bowdoin and described by Franklin in the letter to Bowdoin which is printed earlier in this article (above footnote 4); the original of this letter may be found in the Massachusetts Historical Society Library. The drawing accompanying Bowdoin's copy of the pamphlet is identical to that which we reproduce below, and the writing is in the same hand in both. In the second line of the second paragraph of page "[1]" Bowdoin has changed ". . . in the Longitude of five Degrees *West* of *London* . . ." to "in the Longitude of five hours *West* of *London*. . . ."

The Situation of Mercury upon the Sun, at his going out of the Sun at Quebec. His Emersion will be about V^h. 25' in the Morning of the 6^th. of May, 1733, Half an Hour after the Sun is Rising.



For D. Johnson

from Dr Franklin
50 copies only were printed.

[1]

LETTERS

Relating to the *Tranſit* of MERCURY over the SUN, which is to happen *May* 6, 1753.

WHAT put me upon giving you the Trouble of this, was, the Sight which a few Days ago I had of ſome Letters from the *Royal Academy of Sciences*, at *Paris*, with Directions for obſerving in *Canada*, the End of a Tranſit of *Mercury* over the *Sun*, which is to happen on the 6th of *May* next, and, by their Eſtimation, about three Quarters paſt Five in the Morning, at *Quebeck*; and that it ends at, or poſſibly before, Sun-riſing, at the Lake *Superieur*.

This made me look into *Lowthor*'s Abridgment of the Tranſactions of the *Royal Society of London*, Page 431, and by that, in the Longitude of five Degrees *Weſt* of *London* (which I ſuppoſe is nearly the Longitude of *Philadelphia*; as *New-York*, by many Obſervations of the Eclipſes of *Jupiter*'s firſt Satellite, was found in 4 h. 56 min. nearly) it would ſeem to me, that the Tranſit would end about eighteen Minutes after Six in the Morning: So that it may very well be obſerv'd in all the *Engliſh* Colonies on the Main.

The Jeſuits in *China*, and the *Eaſt-Indies*, I doubt not, will obſerve it in ſundry Places there, as the whole Continuance of *Mercury* on the Sun will be there viſible, and, if well obſerved there, and the End well obſerved in *North America*, it will bid the faireſt of any Thing hitherto had, to give the *Sun*'s Parallax, or Diſtance from the Earth; for the Triangles made of the Obſervations in the *Eaſt-Indies*, with thoſe here, will have known Baſes of above three Quarters of the Diameter of the Earth. The next Tranſit, by Page 432, is in 1756, but it will not be viſible here.

But the critical Time for obtaining the *Sun*'s Parallax, will be the Tranſit of *Venus* over the *Sun* (by Page 436) the 26th of *May*, 1761, Old Stile, which, in 5 h. *Weſt* Longitude, I eſteem, will end at Fifty-three Minutes after Four in the Morning, and be viſible at *Philadelphia* for a Quarter of an Hour, after Sun-riſe, and much longer Northward and Eaſtward.

Jones's Abridgment of the *Tranſactions*, Vol. IV. Page 213, *&c.* has a Diſcourſe of *Edmund Halley*, concerning that Tranſit of *Venus*, and a Figure of it, and by good Obſervations of that, he ſays, the Parallax of the *Sun* may be aſcertained to $\frac{1}{100}$, whereas I doubt of its being certain now to $\frac{1}{4}$; for *Halley* there ſuppoſes it to be twelve Seconds and an Half; whereas *Flamſtead*, in ſundry Places from the *Tranſactions*, from his Obſervations of *Mars* when neareſt the Earth, eſteems it not to exceed ten Seconds.

By *Tranſactions*, Vol. I. Pages 435, and 436, you'll ſee, that no Tranſit of *Venus*, till the Year 2004, will be viſible both here and in the *Eaſt-Indies* at the ſame Time; ſo that if this Opportunity be miſſed, there will be none ſo good for 250 Years to come, to aſcertain this much deſired Point of the *Sun*'s Parallax, which being known, the Parallax of all the Planets is of Courſe from thence found.

As there are now ſundry Nurſeries of Learning ſpringing up in *Pennſylvania*, *Jerſey*, *New-York*, *Connecticut*, and *Boſton*, all Ways ſhould be thought of, to induce each of thoſe to provide a proper Apparatus for making ſuch Obſervations, long before the Year 1761, that they may be expert at taking Obſervations of that Kind, before that Tranſit happens; and in the mean time, to be aſcertaining the Longitudes of theſe Places, by Obſervations of the Eclipſes of *Jupiter*'s firſt Satellite, and the Latitudes of Places, by good Quadrants; for theſe Things ſhould be known and aſcertained, to render the Obſervations of the Tranſit of Uſe for aſcertaining the Parallax.

Another Reaſon, why Preparation ſhould be made in all theſe Places for that rare Event, is, that ſhould it happen to be cloudy in ſome of theſe Places, yet it may be clear in others, and by Means of them that have clear Weather, the great End may be gained; that Event may well be called rare, as *Horrox*, who ſaw the laſt Tranſit of *Venus* over the *Sun*, on *November* 24, 1639, now 114 Years ago, is the only One of the Poſterity of *Adam*, who has ſeen one of theſe Tranſits.

I have ſaid before, that the *Sun*'s Parallax is not aſcertained to a Fourth Part, but it ſeems there is a much greater Difference in Opinion about it than that; for tho' it be generally taken now to be ten Seconds, yet the Book, called *Mathé*, or *The Coſmotheoria Puerilis*, printed in 1740, Vol. II. Page 388, *&c.* gives very plauſible Reaſons, why it cannot

cannot be leſs than Twenty Seconds, and he thinks Twenty-ſix Seconds a more reaſonable Number; for he ſhows, that if the Parallax be only ten Seconds, then the Point of equal Attraction between the *Sun* and Earth, is but Forty-five Semidiameters of the Earth diſtant from the Earth, but the *Moon*'s Diſtance is about Sixty, and therefore fifteen Semidiameters in its Conjunction nearer the *Sun*, than the Point of equal Attraction; and from thence he concludes, that as there the Attraction is greater to the *Sun*, than to the Earth, it could never adhere to the Earth, but be drawn from it towards the *Sun*; and allowing the Parallax to be Twenty Seconds, yet even in that Caſe the *Moon* would be ſometimes beyond the Point of equal Attraction; and Twenty-ſix Seconds ſhould be allowed, to keep it always within that Point. Which Reaſons prevailed with me to be of his Opinion, till I ſaw Mr. *Maclaurin*'s Explanation of Sir *Iſaac Newton*'s Philoſophy, which demonſtrates clearly, that tho' the *Moon* goes without the Point of equal Attraction, as *Mathſ* ſays, yet it will adhere to the Earth, by Means of its projectile Force, in its Orbit round the *Sun*.

To point out what Apparatus of Inſtruments ſhould be procured, I know of nothing better than to refer to the Abridgment of the *Philoſophical Tranſactions*, where Multitudes of Obſervations of the heavenly Bodies appear, and the Inſtruments they were obſerved with, and how: And as to the Obſervations of the Tranſit of *Mercury*, in particular, and Inſtruments the Obſervers made uſe of, you will ſee largely in the Abridgment of the *Philoſophical Tranſactions*, Vol. VIII. Page 194 to 208, and Vol. IV. Page 213, *&c.* before mentioned.

Each of theſe Places, which have not a Sett of the Abridgments of the *Philoſophical Tranſactions*, ſhould, in the firſt Place get them, being in nine Volumes Quarto, which, as they will be cheaper, ſo they will be much eaſier to turn to, than the *Tranſactions* themſelves, by means of the Tables.

I find, by the Preface to *Halley*'s Tables, Page 3, that No. 386 of the *Tranſactions*, contains *Halley*'s Corrections of his Numbers of *Mercury*, but that Vol. VI. containing that Number, I have lent to a Gentleman, living at Seventy Miles Diſtance from hence.

I find by *Halley*'s Tables, that *Macao*, in *China*, is in 7 h. 33 min. and *Pekin*, in *China*, in 7 h. 45 min. *Eaſt* Longitude; yet by reaſon of their Northern Latitudes, and the *Sun*'s Northern Declination at the Times of both the preceding Tranſits, they may ſee the Ends of them before the *Sun* ſets in thoſe Places.

I have computed what would be the Lengths of the Baſes of Triangles made of Obſervations at *Philadelphia*, and Obſervations in the following Places in the *Eaſt-Indies*, and found them as follows:

	Place.	Longitude.	Latitude.	Parts of the Earth's Diameter, ſuppoſing the Whole to be 100,000.
Longitudes and Latitudes from *Halley*'s Tables.	*Pekin*, in *China*,	116 deg. 20 min. E.	39 deg. 54 min. N.	76,288
	Macao, in *China*,	113 deg. 46 min. E.	22 deg. 10 min. N.	85,375
Longitudes and Latitudes taken from a Map of *Aſia*, by *Bowen*, in 1714.	*Pondicherry*,	79 deg. 0 min. E.	12 deg. 30 min. N.	87,551
	Batavia,	104 deg. 20 min. E.	6 deg. 20 min. S.	95,714

On the Papers of Directions from *Paris*, I would obſerve, that I think them very good, and that I find all, or moſt of them in the *Tranſactions*; and that if the Obſerver is acquainted with making Obſervations of that Kind, they ſeem rather too particular; if he is not acquainted, the Neglect of mentioning the Smoaking the Eye-glaſs before he looks at the *Sun* thro' the Teleſcope and Quadrant (if they have not ſmoak'd Plane Glaſſes fitted, without the Eye-glaſs) may run the Obſerver into the Danger of loſing an Eye: If he is to obſerve the Figure of the *Sun* caſt on a Paper thro' the Teleſcope, then the darkening of the Room ſhould have been mentioned.

TRANSLATIONS *of the Letters, &c. from* Paris.

Paris, October 10, 1752.

SIR,

THE Aſtronomers here have a little too late propoſed to me, to get at *Quebeck*, Obſervations made of the Paſſage of *Mercury* upon the *Sun*, which ſhould happen the Beginning of *May* next; I cannot do this, which concerns all Nations, who deſire the Perfection of Geography and Aſtronomy, but by a Jeſuit Profeſſor of Hydrography, at *Quebeck*; but it is impoſſible that he ſhould in time receive the Letter herewith, thro' our Colonies; and I have no Hopes of his receiving it, unleſs you will forward it by *Boſton*, or *New-York*. I ſend you Duplicates of it, that you may ſend by different Veſſels; and I ſend it open to you, that you may ſee that nothing in it concerns the Government.

The

The Taſte I know you have for every Thing that may be uſeful and agreeable to Mankind, makes me hope that you will favour the Paſſage of that Letter.--------I am, with a reſpectful Attachment, *Sir*,

Your moſt humble, and moſt obedient Servant.

Paris, October 10, 1752.

Reverend Father,

I SEND you Quadruplicates at leaſt, of a Memorial of M. *de L' Iſle*, of the *Academy of Sciences*, to direct you in an Obſervation of *Mercury*, which is ſtrongly deſired ſhould be made at *Quebeck*; but, unhappily, I was not acquainted with this, till this Day; and it is a great Chance if any of theſe Memorials will come in time to you.--------I am, with a true Attachment, *Reverend Father*,

Your moſt humble, and moſt obedient Servant.

To the Reverend, Reverend Father,
Bone Camp, *Jeſuit, at* Quebeck.

MEMORIAL, *mentioned in the laſt.*

The Paſſage of MERCURY *upon the* SUN, *on the 6th of* May, 1753, *to obſerve in* Canada.

THE Paſſage of *Mercury* upon the *Sun*, which ſhould happen the 6th of *May*, 1753, is one of the moſt curious and uſeful Obſervations that can be made, for Aſtronomy and Geography: By the exact Knowledge had of the Motion of that Planet, it may be aſſured with Certainty, that *Mercury* will paſs out of the *Sun*, at *Quebeck*, about three Quarters after Five in the Morning of the 6th of *May*; this will be near Half an Hour after the *Sun*'s Riſing. If there were Aſtronomers in that Country, capable to obſerve well that Emerſion, and the Situation of *Mercury* upon the *Sun*, ſome Time before the Emerſion, it would be of the greateſt Advantage to Aſtronomy and Geography; there wants only for this, an aſtronomical Clock [*a good Clock (I ſuppoſe) which ſhows Seconds, is ſuch an One*] a Quadrant, for to regulate the Clock, and a good Teleſcope; the Quadrant may alſo ſerve to obſerve the Situation of *Mercury* upon the *Sun*, before the Emerſion, as I am about to ſhew.

There is herewith a Plan, in which the great Circle repreſents the *Sun*'s Diſk, and the little Circles repreſent *Mercury*, as it will appear, after the Riſing of the *Sun*, until it emerges out of the Diſk of the *Sun*; the Situation of *Mercury* upon the *Sun* will be different, according as the Teleſcope repreſents Objects, direct, or inverted; for that Reaſon I have wrote upon the Plan, *The direct Figure*; or, *The inverted Figure*: You muſt be governed by one of theſe two Inſcriptions, according as the Teleſcope ſhall repreſent the Objects, direct, or inverted. When the Teleſcope does not invert the Objects, you muſt hold the Paper ſo, that the Croſs, X be at Top, then you will ſee that *Mercury* will emerge at the Right Hand, by its approaching to the Weſtern Limb of the *Sun*, following the Numbers 1, 2, 3, 4, 5, 6, 7, in Fig. I. or following the Letters ABC, in Fig. II. But if you uſe a Teleſcope which inverts the Objects, you muſt hold the Paper in an inverted Situation, ſo that the Croſs, X be at Bottom, and then you will ſee that *Mercury* is on the Left Side of the *Sun* in going out, and appearing to approach the Limb of the *Sun*, according to the Letters *a b c d e f g*, in Fig. I. or according to the Letters M N O, in Fig. II.

The Figure II. ſerves to repreſent more diſtinctly, what is to be obſerved at the Time of the Emerſion of *Mercury*, from the Diſk of the *Sun*; for that Reaſon it is, that the Body of *Mercury* is there more diſtinctly repreſented by the ſmall Circles A B C, or M N O, and the Limb of the *Sun*, by the Arc D E; and, for making the Obſervations well that are deſired, there ought to be uſed a Teleſcope, ſo long, and ſo good, as that the Diſk of *Mercury* may appear as round, and as large (if it be poſſible) as it is ſeen upon the Figure, for then the Obſervations may be made the more exactly.

There are three principal Moments to obſerve; *Firſt*, When *Mercury* ſhall be in A, or in M, one of its Diameters diſtant from the Limb of the *Sun*. *Secondly*, The Moment that *Mercury* ſhall be in B, or in N, its Limb touching that of the *Sun*, which is called, *The interior Contact*, or the Beginning of the Emerſion. *Thirdly*, The Moment of the intire Emerſion, or of the exterior Contact, when the two Limbs of the *Sun* and *Mercury* appear as yet to touch in parting. To theſe three Moments, there may another be added, *to wit*, the Moment when by your Sight *you eſteem* the Center of *Mercury* to appear upon the Limb of the *Sun*; but as that Moment cannot be judged of, but by Eſtimation, I have ſaid *you eſteem*; but you muſt be principally attentive to the two Moments of the Beginning of the Emerſion, and the intire Emerſion; which two Moments ſhould follow one the other, about three Minutes, and ſeventeen Seconds Diſtance of Time. There is no Time to be loſt for making, with the greateſt poſſible Preciſion, the two Moments of the Contact, interior

rior and exterior; if you are very attentive, and have a good Telescope, thole two Moments may be mark'd with the Precision of a Second, or of the Twinkling of an Eye; the first Contact, or interior Contact, is when the Light of the Limb of the *Sun* begins to separate; and the exterior Contact, or End of the Emersion, is when the Light of the Limb of the *Sun* (which had been separated for more than three Minutes) comes to meet.

With Regard to the other Observations which may be made, to determine the Situation of *Mercury* upon the *Sun*, before it is so near the Limb as to observe its Emersion, as I have already shewn; I say, these other Observations want only a Quadrant, with a Telescope fixed to it, in which there is a vertical Thread, and horizontal Thread; but the Telescope must be so good, and so long, that you may perceive *Mercury* upon the *Sun*, tho' it should not appear bigger than a Point, it is enough if it be distinguished: Direct then the Telescope to the *Sun*, as soon as it appears distinctly after its Rising, and leaving the Telescope in that Position fix'd while the *Sun* and *Mercury* pass over it, observe the Moments in which *Mercury* and the Limbs of the *Sun* pass over the vertical Thread, and horizontal Thread; after that they have so passed, and the precise Moments by the Clock mark'd, of each of these Passages, move the Telescope, to make them pass the same Way a second Time, and afterwards a third Time, *&c.*

You may, in every different Situation of the Telescope of the Quadrant, observe the Passages of the Limbs of the *Sun* at the same Thread; for Example, the upper Limb and lower Limb, at the horizontal Thread; and the preceding and following Limb at the vertical Thread; and which, with the two Moments of the Passages of *Mercury* by the horizontal Thread, and vertical Thread, would be six Moments, to observe in every Situation of the Telescope; but it is not necessary to make all these Observations, it will be enough to observe, at the horizontal Thread, the Passage of *Mercury* and one of the Limbs of the *Sun*, either upper or lower, *to wit*, that which shall be most convenient, or which shall pass nearest to the Passage of *Mercury*; the same may be said of the vertical Thread; and it will be sufficient there to observe, besides the Passage of *Mercury*, that Limb of the *Sun*, either preceding or following, which shall pass nearest to *Mercury*; so that the six Observations I have spoke of are reduced to four, and even two only need be made in each Situation of the Telescope, but then these Observations should be made alternately, *that is to say*, after having observed the Passages only by the horizontal Thread, you must immediately after, in the next Situation of the Telescope, observe them by the vertical Thread; afterwards, in another Situation by the horizontal Thread, and so go on alternately, taking Care to make these Observations follow one another as quick as possible: It is not necessary to say that Care must be taken in every of these Situations, that the Telescope be well fixed, without being subject to be disturbed; that the Quadrant be well seated, and that the horizontal and vertical Threads be in the Situation required, during the Observations.

As to the Clock, it should be well regulated to the *Sun*, by corresponding Altitudes of the *Sun*, taken many Days before and after, if it be possible, to the End that the true Time may be assigned with the more Certainty and Precision of every Observation, and principally of the Moments of the Emersion, which I have spoke of before.

It were to be wish'd that this Observation might be made in a Place of which we might know, as exactly as possible by other Observations, the Longitude in regard to *Paris*; for then these Observations might be used for finding the *Sun*'s Parallax: But if that cannot be done, because we know not by other Observations the Longitude of the Place in which these Observations are made, yet we can know that Longitude by these Observations with great Precision, by supposing the Parallax of the *Sun* known, which we may suppose, since the Observations made at the *Cape of Good Hope*, and in *Europe*, have made known to us, with great Precision, how much it is. Wherefore, in whatever Place the Person be who shall make these Observations, in *Canada*, be it at *Quebeck*, or elsewhere in the inward Parts of the Country, they will not fail to be useful to Astronomy and Geography; but it is to be remark'd, that if the Observation be made too far in the Country, as at the Lake *Superiour*, *&c.* it is to be feared that the Emersion of *Mercury* out of the *Sun*, may happen too near the Horizon, or even before the *Sun* is risen, for which Reason the most advantageous Place of all that Country would be *Louisbourg*, whose Longitude hath been most exactly determined by *Mr. Chabert*; but for want of that, it may be done at *Quebeck*, or at *Montreal*. The Latitude or Heighth of the Pole, of the Place of Observation, ought to be had.

PSYCHOLOGICAL WARFARE IN 1776: THE JEFFERSON-FRANKLIN PLAN TO CAUSE HESSIAN DESERTIONS

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FROM Kew on November 12, 1775, at "2 min. pt. 7 p.m.," George III addressed Lord North a note saying he had "no objection to the Landgrave of Hesse Cassel and the Duke of Brunswick being addressed for troops to serve in America." [1] This was a perfectly natural and even routine decision for His Majesty. The British government had long been accustomed to hiring manpower to fight its wars, and George III's relatives in Germany were accustomed to renting out their troops in order to pay their own debts. But it was a fateful decision, as we shall see, and one fraught with ironies that were apparent as soon as it became known. A few decades earlier the King's own progenitors had been instrumental in sending over whole shiploads of Germans to America—the Palatine redemptioners who settled in New York Province and later elsewhere. Captain James Luttrell, a member of the Whig opposition who had spent some years in America, did not fail to remind ministers of both the danger and the irony of their policy when the treaties with the German princelings were presented for ratification. He named over some of the prosperous German settlements scattered through New York, New Jersey, Pennsylvania, Maryland, and Virginia. He did not doubt that the mercenaries about to be sent over to America would enjoy the prospect of settling there, nor did he doubt that inducements would be held out to them to do so. In short, he concluded, "These warlike transports we are to fit out may, then, be considered as good as the *Palatine* ships for peopling *America* with *Germans*." [2]

The treaties were ratified; the ministers and their royal master breathed with relief, for they were glad to get troops even at the exorbitant prices demanded; and the unfortunate subjects of all this chaffering moved toward northern ports amid difficulties that would have discouraged less avaricious men than their several sovereigns. Thanks to Arthur Lee and other informants in London, news of these events reached America with extraordinary speed. And it had a profound effect. As early as January 19, 1776, Edward Shippen reported that in Philadelphia, as a result of rumors about the hiring of mercenaries, "Conversions [to the patriot party] have been more rapid than ever under Mr. Whitefield," and that even Mr. Dickinson had been heard to say that he saw no alternative but independence or slavery.[3] The Philadelphia patriots began writing to England that the sending of the mercenaries was really a stroke favoring America, "because we know that the Germans . . . will find it much more preferable for their present comfortable subsistence, as well as a prospect of future happy settlement, to join us." [4] General Washington himself was persuaded likewise. On May 11 he asked President Hancock whether it might not

> be advisable and good policy, to raise some Companies of our Germans to send among [the mercenaries], when they arrive, for exciting a spirit of disaffection and desertion? If a few trusty, sensible fellows could get with them, I should think they would have great weight and influence with the common Soldiery, who certainly have no enmity toward us, having received no Injury, nor cause of Quarrell from us.[5]

On the other hand, rumors filled the papers all spring about the enormous numbers of hired troops on their way and the extraordinary skill and ferocity of the Germans as soldiers. The Jägers, it was said, were "amazingly expert" in marksmanship, for they were trained especially to shoot boars in the forests of the German princelings.[6] Was

[1] *Correspondence of King George the Third with Lord North*, ed. W. Bodham Donne, **1**: 293, London, 1867.

[2] Debate of Feb. 29, 1776; Peter Force, *Amer. Archives*, ser. 4, **6**: 283, Washington, 1837–1853.

[3] Letter to Jasper Yeates, quoted in John C. Miller, *Origins of the American Revolution*, 477, Boston, Little, Brown, 1943.

[4] Extract of a letter from Philadelphia, April 13, in the London *Gazetteer and New Daily Advertiser*, June 19, 1776; *Letters on the American Revolution*, ed. Margaret W. Willard, 307, Boston and N. Y., Houghton, Mifflin, 1925.

[5] *Writings of George Washington*, ed. John C. Fitzpatrick, **5**: 36, Washington, Govt. Printing Off., 1931–1943.

[6] New York *Constitutional Gazette*, May 15, 1776, quoted in Frank Moore, *Diary of the American Revolution* **1**: 233–234, N. Y., 1860.

it going to be possible to appeal to the better instincts of these professional killers, or was it not? That remained to be seen.

Authentic news arrived early in May through one George Merchant, who had marched with Arnold to Quebec, had been captured there, taken to England, and then returned to Halifax. Soon afterwards he escaped south and brought with him, sewn in the waistband of his breeches, copies of the British contracts with Brunswick, Hesse-Cassel, and Hesse-Hanau for a total of some 17,000 troops.[7] Congress ordered the treaties published; the citizenry read them and felt a proper indignation at the terms of these bargains in human flesh. Franklin read them on his return trip from Canada and wrote his fellow commissioners, still in Canada: "The German Auxiliaries are certainly coming. It is our Business to prevent their Returning."[8] Franklin's indignation, deep and lasting, eventually produced his celebrated letter on the sale of the Hessians, a hoax so successful that it still deceives twentieth-century readers.[9] The direct connection between the hiring of the Germans and American independence is clear. When the Virginia Convention resolved on May 15 to instruct its delegates in Congress to move for independence, it recited among the causes for its action "the aid of foreign troops engaged to assist [the] destructive purposes" of the British king.[10] One of the Virginia delegates in Congress was chosen, as it turned out, to write the paper that declared America independent. Thomas Jefferson did not fail to include among the crimes of George III that "he is, at this time, transporting large armies of foreign mercenaries to compleat the works of death, desolation and tyranny, already begun with circumstances of cruelty and perfidy." The king's routine decision of last November had borne bitter fruit.

Congress on May 21 had read the papers brought by George Merchant and had appointed John Adams, William Livingston, Thomas Jefferson, R. H. Lee, and Roger Sherman a committee "to extract and publish the treaties; . . . to consider of an adequate reward for the person who brought the intelligence; and to prepare an address to the foreign mercenaries who are coming to invade America."[11] The committee performed two of its assignments but did not complete the third. One of the members—it might have been any one of them, though it was most likely Jefferson—asked George Wythe, who was not a member of the committee, to draft the proposed address. Wythe complied, and his draft is still among Jefferson's papers in the Library of Congress. It was a production very characteristic of Wythe, and, from our point of view at least, an eloquent appeal. No one knows how well it might have served its purpose for it was never used. It reads:

> The delegates of the thirteen united colonies of America to the officers and soldiers of
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> It is with no small pleasure, when in this first address we ever made to you we must call you enemies, that we can affirm you to be unprovoked enemies. We have not invaded your country, slaughtered wounded or captivated your parents children or kinsfolk, burned plundered or desolated your towns and villages, wasted your farms and cottages, spoiled you of your goods, or annoyed your trade. On the contrary, all your countrymen who dwell among us, were received as friends, and treated as brethren, participating equally with our selves of all our rights franchises and privileges. We have not aided ambitious princes and potentates in subjugating you. We should glory being instrumental in the deliverance of mankind from bondage and oppression. What then induced you to join in this quarrel with our foes, strangers to you, unconnected with you, and at so great a distance from both you and us? Do you think the cause you are engaged in just on your side? To decide that we might safely appeal to the judicious and impartial—but we have appealed to the righteous judge of all the

[7] John Langdon to George Washington, May 10, 1776; Force, *Amer. Archives*, ser. 4, **6**: 501. George Washington to the President of Congress, May 18, 1776; Washington, *Writings*, ed. Fitzpatrick, **5**: 56–57.

[8] Letter of May 27, 1776; *Writings of Benjamin Franklin*, ed. Albert H. Smyth, **6**: 448, N. Y., Macmillan, 1905–1907.

[9] Printed in Smyth's edition, **7**: 27–29, with a very inadequate bibliographical note. Though not included in P. L. Ford's *Franklin bibliography*, Brooklyn, 1889, this pretended letter from Count von Schaumburg to the Hessian commander in America, lamenting that the Hessian losses at Trenton were not still greater than they actually were, has long been accepted as Franklin's and is of a piece with other literary-political hoaxes known to be by him. A proper bibliographical study of this piece, badly needed, would require a monograph, and should begin with the entries in Emil Meynen, *Bibliographie des Deutschtums der Kolonialzeitlichen Einwanderung in Nordamerika*, 267–268, Leipzig, Harrassowitz, 1937, listing numerous texts and discussions in French, German, and English. In Germany the letter became known as "Der Uriasbrief" and was learnedly refuted and discredited every few years during the nineteenth century.

[10] *Proceedings of the Convention of Delegates Held . . . in the City of Williamsburg in the Colony of Virginia, on Monday, the 6th of May, 1776*, 15, Richmond, 1816.

[11] *Journals of the Continental Congress*, ed. W. C. Ford *et al.*, **4**: 369, Washington, Govt. Printing Off., 1904–1937.

earth, inspired with humble confidence and well-grounded hopes, that the lord of hosts will fight our battles, whilst we are vindicating that inheritance we own ourselves indebted to his bounty alone for. Were you compelled by your sovereigns to undertake the bloody work of butchering your unoffending fellow-creatures? Disdain the inhuman office, disgraceful to the soldier. Did lust of conquest prompt you? The victory, unattainable by you if heaven war not against us, which we know of no good reason you have to expect, or we to dread, shall cost you more than the benefits derived from it will be equivalent to; since it will be disputed by those who are resolved inflexibly to live no longer than they can enjoy the liberty you are hired to rob them of, and who are conscious of a dignity of character, which a contempt of every danger threatening the loss of that blessing seldom fails to accompany. Were you tempted by the prospect of exchanging the land you left for happier regions, for a land of plenty and abhorrent of despotism? We wish this may be your motive; because we have the means, and want not inclination, to gratify your desires, if they be not hostile, without loss to ourselves, perhaps with less expense, certainly with more honour and with more advantage to you than victory can promise. Numberless germans and other foreigners, settled in this country, will testify this truth. To give you farther assurance of it, we have resolved, '

Mistake not this for an expedient suggested by fear. In military virtue we doubt not americans will prove themselves to be second to none; their numbers exceed you and your confederates; in resources they now do or soon will abound. Neither suppose that we would seduce you to a treacherous defection. If you have been persuaded to believe that it is your duty, or will be your interest to assist those who prepare, in vain we trust, to destroy us; go on; and, when you shall fall into our hands, and experience less severity of punishment than ruffians, and savages deserve, attribute it to that lenity, which is never separate from magnanimity. But if, exercising your own judgments, you have spirit enough to assert that freedom which all men are born to, associate yourselves with those who desire, and think they are able to secure it, with all the blessings of peace, to you and your posterity.[12]

On the day that independence was voted General Howe arrived from Halifax at Staten Island with a formidable army which during the next several weeks was repeatedly reinforced. Against expected British forays along the Jersey coast Washington had worked out with Congress a plan of defense which was given the picturesque name of "the flying camp." An amateur outfit clear through, the flying camp was made up of recruits drawn from a citizenry half thrilled and half terrified by the prospect of a war in its own front yard. The recruits marched and the supply wagons rumbled through the Jerseys to an encampment at Perth Amboy, hardly more than a hundred yards across the narrow sound that separates the foot of Staten Island from the mainland.[13] Here the young Pennsylvanians from Bucks, Delaware, and Chester counties could see the British transports arriving in Lower New York Bay and could exchange pot shots with the men cantoned opposite them. On August 12 a British fleet of 107 sail arrived and began unloading troops, among whom were the long-expected Hessians, seven or eight thousand in number.[14] No doubt for the purpose of giving the Americans a good view of them, the Hessians were ordered within a week to take post at Amboy Ferry, immediately across from the American camp.[15]

Now was the time, if ever, to see whether the hired troops would be glad to throw down their arms if given a chance to do so. On August 9 Congress resolved

That a committee of three be appointed, to devise a plan for encouraging the Hessians, and other foreigners, employed by the King of Great Britain, and sent to America for the purpose of subjugating these states, to quit that iniquitous service: The members chosen, Mr. Wilson, Mr. Jefferson, and Mr. Stockton.[16]

The committee reported on August 14. Curiously, no copy of the report can be found in either the Papers of the Continental Congress, where it belongs, or in Jefferson's papers, where drafts of scores of committee reports he prepared or as-

[12] Jefferson Papers **1**: 146. E. C. Burnett first suggested that Wythe's draft was prepared for the committee appointed on May 21 (*Letters of members of the Continental Congress* **2**: 63, note, Washington, Carnegie Instn., 1921–1936); and so it must have been, for Wythe left Congress in June and did not return before mid-September (*ibid.* **1**: lxvi; **2**: lxxii).

[13] An interesting "Journal of the campaign to Amboy, and other parts of the Jerseys," kept by Capt. Benjamin Loxley, was printed in Historical Soc. of Penna., *Collections* **1**: 223–236, 1853. For some strictures by a professional soldier on the flying camp, see L. H. Butterfield's article, Franklin, Rush, and the Chevalier de Kermorvan: An Episode of 1776, *Amer. Philos. Soc. Lib. Bull.* for 1946: 33–44.

[14] *The American journal of Ambrose Serle, secretary to Lord Howe, 1776–1778*, ed. Edward H. Tatum, Jr., 62, San Marino, Huntington Lib., 1940; see also Force, *Amer. Archives*, ser. 5, **1**: 1109.

[15] Field, Thomas W., *The Battle of Long Island*, 425–426, Brooklyn, 1869.

[16] *Jour. Cont. Cong.* **5**: 640.

sisted in preparing are preserved. In the form of a resolve of Congress it was, however, spread on the Journal and reads as follows:

> Whereas it has been the wise policy of these states to extend the protection of their laws to all those who should settle among them, of whatever nation or religion they might be, and to admit them to a participation of the benefits of civil and religious freedom; and, the benevolence of this practice, as well as its salutary effects, have rendered it worthy of being continued in future times.
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> And whereas, his Britannic majesty, in order to destroy our freedom and happiness, has commenced against us a cruel and unprovoked war; and, unable to engage Britons sufficient to execute his sanguinary measures, has applied for aid to certain foreign princes, who are in the habit of selling the blood of their people for money, and from them has procured and transported hither considerable numbers of foreigners.
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> And it is conceived, that such foreigners, if apprised of the practice of these states, would chuse to accept of lands, liberty, safety and a communion of good laws, and mild government, in a country where many of their friends and relations are already happily settled, rather than continue exposed to the toils and dangers of a long and bloody war, waged against a people, guilty of no other crime, than that of refusing to exchange freedom for slavery; and that they will do this the more especially when they reflect, that after they shall have violated every Christian and moral precept, by invading, and attempting to destroy, those who have never injured them or their country, their only reward, if they escape death and captivity, will be a return to the despotism of their prince, to be by him again sold to do the drudgery of some other enemy to the rights of mankind.
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> And whereas, the parliament of Great Britain have thought fit, by a late act, not merely to invite our troops to desert our service, but to direct a compulsion of our people, taken at sea, to serve against their country:
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> *Resolved*, Therefore, that these states will receive all such foreigners who shall leave the armies of his Britannic majesty in America, and shall chuse to become members of any of these states; that they shall be protected in the free exercise of their respective religions, and be invested with the rights, privileges and immunities of natives, as established by the laws of these states; and, moreover, that this Congress will provide, for every such person, 50 Acres of unappropriated lands in some of these states, to be held by him and his heirs in absolute property.[17]

There is no proof that this paper came from Jefferson's hand, but the style is perfectly characteristic of him, and, as we shall see, it was he who drew the very similar appeal to the Hessian officers ordered by Congress two weeks later. These are good reasons for assigning the authorship to Jefferson, and there are no good reasons to assign it to any other person. Congress thought it a businesslike performance and directed the same committee, augmented by Dr. Franklin, "to take proper measures to have it communicated to the foreign troops." Copies were sent promptly to General Washington at New York, and Washington wrote President Hancock two days later: "The Resolution . . . respecting the Foreign Troops, I am persuaded would produce Salutary Effects, If it can be properly circulated among them; I fear it will be a matter of difficulty:—However I will take every measure that shall appear probable to facilitate the end."[18] Next day he asked for, and received, more copies.[19] If we accept the statement of the disreputable Herman Zedtwitz (a former Prussian officer who held a lieutenant colonel's commission in the New York line), the papers sent on to Washington had not yet been translated. Zedtwitz on August 24 wrote William Tryon, titular royal governor of New York, that "3 days Ego Gen. Washington Send for me & If would [*sic*] Translate a paper of great Consequenc in god Hygerman, he Dictated himselff the Contents ar as follow." From the inaccuracy of his paraphrase it is pretty clear that Zedtwitz knew about this affair only from hearsay. He was informing on the Americans in the hope of a reward, but he was also attempting to bluff Tryon. He succeeded in neither of his purposes, for his letter was brought to the American headquarters, and he was promptly court-martialed and imprisoned.[20]

By August 26 Washington was able to announce with satisfaction that "The Papers designed for the foreign Troops, have been put into several Channels, in order that they might be conveyed to them, and from the Information I had Yesterday, I have reason to believe many have fallen into their hands."[21] Washington's "Channels" are not known, but one of them was almost certainly Christopher Ludwick, one of the most engaging adven-

[17] *Ibid.* **5**: 653–655.

[18] *Writings*, ed. Fitzpatrick, **5**: 450–451.

[19] *Ibid* **5**: 463–464.

[20] Zedtwitz to Tryon, Aug. 24, 1776; facsimile in Force, *Amer. Archives*, ser. 5, **1**: facing columns 1159–1160. On Zedtwitz's brief and inglorious career in America, see Carl Van Doren, *Secret history of the American Revolution*, 15–17, N. Y., Viking, 1941.

[21] Letter to John Hancock; *Writings*, ed. Fitzpatrick, **5**: 491.

turers of the eighteenth century. Ludwick was a native of Hesse-Darmstadt, had fought against the Turks, and was shortly to become "Baker General" of the Continental army.[22] Early in August he had volunteered his services gratis as baker to the flying camp at Amboy.[23] He, if anyone, would have heard of the proposal to suborn the Hessians, and he was in fact summoned to Headquarters by Washington on August 18.[24] Moreover, an account of Ludwick's extraordinary career by a contemporary (Benjamin Rush) records the following incident:

> From a desire to extend the blessings of liberty and independence to his German countrymen, he once exposed his neck to the most imminent danger. He went, with the consent of the commanding officer of the flying camp, among that part of the British army, which was composed of Hessian troops: while they were encamped on Staten Island, in the character of a deserter. He opened to them the difference between the privileges and manner of life of an American freeman, and those of a Hessian slave. He gave them the most captivating descriptions of the affluence and independence of their former countrymen in the German counties of Pennsylvania. His exertions were not in vain. They were followed by the gradual desertion of many hundred soldiers, who, now in comfortable freeholds or on valuable farms, with numerous descendants, bless the name of Christopher Ludwick. He escaped from the Hessian camp, without detection or suspicion.[25]

Rush knew or remembered nothing of the address from Congress to the mercenary troops, and perhaps he applied some gilding to the incident here related. But nothing is more plausible than that Ludwick, at Washington's request, performed such a mission in order to convey the handbills prepared by Congress to those for whom they were meant.

Meanwhile in Philadelphia Benjamin Franklin, who had been added to the committee to oversee the distribution of the address, had had a characteristically ingenious idea. On the twenty-fourth he wrote Thomas McKean, then serving as colonel with the volunteer forces at Amboy:

> I heard your letter read in Congress relating to the Disposition of the German Troops; and understanding from Col. Ross that they are canton'd on the Island opposite to the Jersey Shore, I send you herewith some of the Resolutions of the Congress translated into their Language, as possibly you may find some Opportunity of conveying them over the Water, to those People. Some of the Papers have Tobacco Marks on the Back, it being suppos'd by the Committee, that if a little Tobacco were put up in each as the Tobacconists use to do, and a Quantity made to fall into the hands of that Soldiery, by being put into a Drift Canoe among some other little Things, it would be divided among them as Plunder before the Officers could know the Contents of the Paper and prevent it.[26]

No copy of the German handbill bearing Franklin's "Tobacco Marks" has been found. In fact for some time it seemed as if no copy of any sort could be found, for none has so far been located in the Papers of the Continental Congress, in the voluminous papers left by Washington, Jefferson, Gates, and Franklin, or in the broadside collections of a dozen major American libraries specializing in Revolutionary materials. The copy reproduced here is in the German State Archives for the District of Cassel at Marburg.[27] The Director reports that this copy of the handbill was presumably enclosed (though not mentioned) in a letter from Lieutenant General von Heister to the Landgrave himself, dated September 3, 1776. It was later pasted on a mounting sheet, from which it has now been removed so that back as well as front could be photographed. The back is blank.

At Amboy a Colonel James Wilson (there were nearly as many colonels as privates in the flying camp), who is not to be confused with the Pennsylvania "signer" and member of the committee of August 9, saw some of the German handbills and was convinced they would have powerful effects. Writing Hancock on the twenty-second, Wilson expressed surprise that so good a scheme was not applied more widely: "Perhaps it is not yet too late to offer additional rewards to officers

[22] Article on Ludwick in *Dictionary of American Biography*.

[23] Loxley's Journal, Historical Soc. of Penna., *Collections* **1**: 228.

[24] Washington's letter is missing but was acknowledged by Hugh Mercer, commander of the flying camp, from Newark on August 19; Mercer says he has sent word to Amboy for Ludwick to attend at Headquarters immediately. Force, *Amer. Archives*, 5th ser., **1**: 1064.

[25] Life and Character of Christopher Ludwick, *Hazard's Register of Penna.* **9**: 162, March 17, 1832. This sketch, written as an obituary tribute, originally appeared in the *American Daily Advertiser*, Philadelphia, June 30, 1801.

[26] Burnett, *Letters of members of the Continental Congress* **2**: 59–60.

[27] Filed in O. W. S. 1248, I. Listed in Marion D. Learned, *Guide to the manuscript materials relating to American history in the German State Archives*, 114, Washington, Carnegie Instn., 1912. (Dr. Whitfield J. Bell, Jr., of Dickinson College, called my attention to this entry in Learned's *Guide*.)

in proportion to their rank and pay." [28] Congress acted immediately on the suggestion. A new committee, consisting of Jefferson, Franklin, and John Adams, was appointed on the twenty-sixth. These gentlemen were used to collaborating, and the case was urgent. On the very next day they reported a resolution in the form of an address to the foreign officers serving with the British, and it was promptly adopted.[29] Their report is not in the Continental Congress Papers, but a draft of it, in Jefferson's hand, is in the Jefferson Papers in the Library of Congress, together with a partial draft, which was rejected by the committee, in the hand of John Adams.[30] Jefferson's draft reads as follows:

Aug. 27. 1776.

The Congress proceeding to take into further consideration the expediency of inviting from the service of his Britannic majesty such foreigners as by the compulsive authority of their prince may have been engaged therein & sent hither for the purpose of waging war against these states, and expecting that the enlightened minds of the officers having command in those foreign corps will feel more sensibly the cogency of the principles urged in our resolution of the 14th. instant, principles which being derived from the unalterable laws of god & nature cannot be superseded by any human authority or engagement, and willing to tender to them also, as they had before done to the soldiery of their corps a participation of the blessings of peace, liberty, property & mild government, on their relinquishing the disgraceful office on which they have been sent hither Resolved that they will give to all such of the said foreign officers as shall leave the armies of his Britannic majesty in America and chuse to become citizens of these states, unappropriated lands in the following quantities and proportions to them and their heirs in absolute dominion. To a Colonel 1000 acres, to a Lt. Col. 800 as. to a Major 600 as. to a Captain 400 as. to an Ensign 200 as. to every noncommissioned officer 100 as. & to every other officer [or] person employed in the sd. foreign corps and whose office or emploiment is [not] here specifically named, lands in the like proportion to their rank or pay in the said corps: & moreover that where any officers shall bring with them a number of the sd. foreign soldiers, this Congress, besides the lands before promised to the sd officers & soldiers, will give to such officers further rewards proportioned to the numbers they shall bring over & suited to the nature of their wants. Provided that such foreign officers or soldiers shall come over from the sd. service before these offers be recalled, [or within after such].[31]

The address to the officers was translated into German and printed overnight. (The report as submitted was doubtless used as printer's copy, just as had apparently happened in the case of a more famous collaborative effort of these three men—the Declaration of Independence. Haste thus accounts for the absence of the committee's manuscript from the official files.) On August 28 Franklin sent to Gates in New York a letter covering a packet of "both sorts" of handbills (for private soldiers and for officers), so that, "if you find it practicable, you may convey them among the *Germans* that shall come against you." [32] Washington acknowledged this further move by Congress in a letter to Hancock of the twenty-ninth. He said—a little ruefully, for the battle of Long Island had occurred in the interval—"As to the Encouragement to the Hessian Officers, I wish it may have the desired effect, perhaps it might have been better, had the offer been made sooner." [33]

What were the results of this Jeffersonian eloquence, these Franklinian devices? What effect did the handbills have upon the mercenaries for whom they were intended? They had very little effect at first, and for reasons easily understood. For one thing, not many reached their marks. The Hessians' own diaries and letters, so far as they have been printed, do not mention them; and the historians who have used the pertinent manuscript sources scarcely mention the incident. One

[28] Force, *Amer. Archives*, ser. 5, **1**: 1110.

[29] *Jour. Cont. Cong.* **5**: 707–708.

[30] Library of Congress, Jefferson Papers **2**: 299. It is printed in the Ford edition of the *Journals* (**5**: 655, note), but is there wrongly associated with the address of August 15 to the private soldiers. It reads:

"Whereas it is probable, that among the officers of the foreign Troops, now in the Service of the King of Great Britain, there may be many, of liberal Minds, possessed of just Sentiments of the Rights of human Nature and the inestimable Value of Freedom; who may be prompted by the Feelings of Humanity, and a just Indignation at the disgracefull service to which they are devoted by an infamous Contract between two arbitrary Sovereigns and at the Insult offered to them by compelling them to war against an innocent People, who never offended them, nor the Nation to which they belong, but are only contending for their just Rights; to renounce so dishonourable a service. Therefore

"Resolved that all such officers who shall abandon the service"

[31] Jefferson Papers **2**: 298.

[32] Force, *Amer. Archives*, ser. 5, **1**: 1193.

[33] *Writings*, ed. Fitzpatrick, **5**: 496. No copy of the handbill addressed to the officers has been found. Edward J. Lowell states that there is a manuscript copy in one of the Hessian regimental journals in the State Archives at Cassel (*The Hessians and the other German auxiliaries of Great Britain in the Revolutionary War*, 286, note, N. Y., 1884).

Im Congreß, den 14ten August, 1776.

Sintemal es hiebevor die weiſe Landesordnung dieſer Staaten geweſen iſt, den Schutz ihrer Geſetze über alle die zu verbreiten, welche ſich unter ihnen niederlaſſen, von welchem Volk oder Religion ſie ſeyn mögen, und ſie zum Genuß der Wohlthaten Bürgerlicher und Religions-Freyheiten aufzunehmen; ſo machen der aus dieſem Verfahren entſtandene Nutzen, ſowol als die heilſamen Wirkungen deſſelben, es der Mühe werth ſelbige in folgenden Zeiten fortzuſetzen.

Und da nun Seine Brittanniſche Majeſtät, um unſere Freyheit und Glückſeligkeit zu vernichten, einen grauſamen Krieg ohne einige Reitzung dazu gegen uns angefangen hat; und weil gedachter König nicht im Stande iſt Britten genug aufzubringen ſeine blutdürſtigen Maaßregeln zu vollziehen, ſo hat er um die Hülfe gewiſſer fremder Fürſten, deren Gewohnheit es iſt das Blut ihres Volks um Geld zu verkaufen, angehalten, und groſſe Anzahlen Ausländer erhalten und hier herüber führen laſſen. Da man ſich nun vorſtellet, daß ſolche Ausländer, wenn ſie von vorgemeldeter Uebung dieſer Staaten benachrichtiget werden, lieber Ländereyen, Freyheit, Sicherheit und den Genuß guter Geſetze und gelinder Regierung in einem Lande wo bereits viele von ihren Freunden und Verwandten glücklich anſäßig ſind, annehmen würden, als den Mühſeligkeiten und Gefahren eines langen und blutigen Krieges bloßgeſtellet zu ſeyn, der gegen ein Volk geführet wird, welches keines andern Verbrechens ſchuldig iſt, als nur, daß es ſeine Freyheit nicht für Sclaverey verwechſeln will; und daß ſie dieſes um ſo viel bereitwilliger thun werden, wenn ſie erwägen, daß, nachdem ſie ein jedes Gebot des Chriſtlichen Glaubens und der Sittenlehre werden geſchändet haben, durch gewaltſame Ueberfälle und Verſuche diejenigen, die ſie oder ihr Land niemals beleidiget, zu verderben; ihre einzige Belohnung, wenn ſie ja dem Tode und der Gefangenſchaft entgehen, ſeyn wird, unter die willkührliche Gewalt ihres Fürſten zurück zu kehren, um durch ihn wieder verkauft zu werden die ſchändliche Arbeit eines oder des andern Feindes der Rechten des Menſchlichen Geſchlechts zu verrichten.

Und ſintemal das Großbritanniſche Parlament, vermittelſt einer letztherigen Acte, gut gefunden, unſere Truppen nicht nur bloß einzuladen unſern Dienſt zu verlaſſen, ſondern auch verordnet hat, unſere zur See weggenommene Leute zu zwingen gegen ihr Land zu dienen: So iſt daher

Beſchloſſen, Daß dieſe Staaten, alle ſolche Fremdlinge, welche die Armee Seiner Brittanniſchen Majeſtät in America verlaſſen, und erwählen wollen Glieder einiger dieſer Staaten zu werden, aufnehmen wollen; daß ſie in der freyen Uebung ihrer reſpectiven Religionen geſchützt, und mit den Rechten, Freyheiten und Befreyungen der Ingebornen dieſes Landes, wie ſelbige durch die Geſetze dieſer Staaten veſtgeſetzt ſind, begabet werden ſollen. Und dieſer Congreß will überdas eine jede ſolche Perſon mit Fünfzig Acker Land das ſonſt keinen Eigner hat, in einigen von dieſen Staaten verſehen, um durch ihn und ſeine Erben als ein vollkommenes Eigenthum gehalten und beſeſſen zu werden.

Auf Verordnung des Congreſſes,

John Hancock, Präſident.

Bezeugts
Charles Thomſon, Secretär.

FIG. 1. Handbill probably written by Thomas Jefferson, translated and printed under the supervision of Benjamin Franklin, and distributed among the Hessian troops on Staten Island, August, 1776. From the only known copy, in the German State Archives at Marburg.

of the first Hessian prisoners, a private soldier named Christian Guiler captured on Staten Island, deposed on October 16, 1776, that "they [the hired troops] saw no papers of any kind among them from us; if they knew that they would be well treated by us, would all lay down their arms; have no desire to return to their regiment again." [34] General Mercer, commandant of the flying camp, forwarded Guiler's testimony to Washington, to whom no doubt it proved heartening. But the British command had been shrewd enough to put the mercenary soldiers to work as soon as they arrived. The battle of Long Island took place within a few days after the last of the foreign troops had disembarked. It was the biggest battle that had yet been fought in North America, and the result was nearly disastrous for Washington's raw army. By the same token it must have been very satisfying to the Hessians since war was their business. The Americans had a much more serious desertion problem in the fall of 1776 than the Hessians did.

An "Extract of a letter from Fort Lee," dated November 14, 1776, and printed in the Philadelphia newspapers, contains the earliest mention of a Hessian deserter I have seen:

> This morning a Hessian soldier deserted to Fort Washington, the very first that has done so—He encourages us to hope that many of his countrymen will follow his example, as soon as they are *assured* the Americans will not hang them for meddling in the present war; a notion that has been so industriously planted, and is [so] firmly rooted, that it will be difficult to eradicate it.[35]

This suggests that the British had indoctrinated the mercenary troops against expected American propaganda, and not without effect. But all such indoctrination was bound to evaporate as the war continued and as the British met reverses—especially reverses which resulted in the capture of German troops, as at Trenton and Saratoga. The American leaders took full advantage of these circumstances. The first Hessians captured in the fighting around New York were put under the care of their compatriot Ludwick, who showed them in Philadelphia and the country round about how Germans lived in the New World. President Hancock wrote Washington on November 16, 1776, proposing an early exchange of these prisoners. "They have been treated in such a Manner during their Stay in this City," he observed, "that it is apprehended, their going back among their Countrymen, will be attended with some good Consequences." [36] After the action at Trenton Washington ordered the separation of officers and men among the captives, so that the privates especially "may have such principles instilled into them during their Confinement, that when they return, they may open the Eyes of their Countrymen, who have not the most cordial Affection for their English fellow Soldiers." [37]

There can be no question about the effectiveness of this policy. Though widely scattered, there is abundant evidence to show that large numbers of the German auxiliaries deserted during periods of captivity at Bethlehem, Lancaster, Carlisle, and Charlottesville. Their names appear on the rolls of state regiments, on tax lists, and sometimes as schoolmasters or clergymen, usually accompanied by the rubric "Hessian" (which may mean anything from an Anspacher to a Waldecker).[38] Most of these men were inconspicuous and doubtless preferred to remain so, but a remarkable case is that of Friedrich Valentine Melsheimer, chaplain of a Brunswick regiment, who preferred to quit the service rather than to be exchanged and who became a Lutheran pastor at Manheim and Hanover, first Professor of Languages at Franklin College in Lancaster, a writer of authoritative works on American entomology, and a member of the American Philosophical Society.[39] There were 785 desertions among the German Convention Troops alone between the surrender at Saratoga in October, 1777, and August 1, 1779.[40] The German princelings hired out about 30,000 troops to their British colleague and relative George III during the American Revolution. Of these, between 17,000 and 18,000 returned to Germany. Among the more than 12,000 lost, somewhat more than half may be accounted for by death from combat or illness. Between 5,000 and 6,000 must there-

[34] Force, *Amer. Archives*, ser. 5, **2**: 1073–1074.

[35] *New Jersey Archives*, ser. 2, **1**: 232.

[36] Burnett, *Letters of members of the Continental Congress* **2**: 153.

[37] Letter to the Pennsylvania Council; *Writings*, ed. Fitzpatrick, **6**: 453; see also 464.

[38] Faust, Albert B., *The German element in the United States* **1**: 354–355, Boston and N. Y., Houghton, Mifflin, 1909. Dr. Whitfield J. Bell, Jr., has collected data on individual deserters, and has kindly allowed me to consult his notes.

[39] Article on Melsheimer in *Dictionary of American Biography*. Early Proceedings of the American Philosophical Society, 1744–1838, *Proc. Amer. Philos. Soc.* **22** (3): 228, 1884.

[40] Wall, Alexander J., The story of the Convention troops, *Quart. Bull. N. Y. Hist. Soc.* **11**: 92, 1927–1928.

fore have deserted.[41] These are old figures and contain elements of conjecture, but there is no reason to doubt that they are approximately correct.[42] They suggest one of the reasons why the British failed in America: George III's decision to employ foreign mercenaries was a bad one; and both the Germans who came and the Americans who received them capitalized on his error.

[41] Faust, *German element* 1: 356 (figures drawn from F. Kapp); Lowell, *Hessians,* 300 (an independent computation).

[42] There has been no recent study of the German mercenaries in the Revolution, and there never has been one of desertion among them. (See Meynen, *Bibliographie,* 258 ff., where there are almost twenty pages of entries under the heading "The German Mercenary Troops in the War of the Revolution.") Such a study, if it were to analyze the relations between the mercenary troops and their officers, between the German and the British troops, and between the Germans and the American troops and citizenry, would be of great value. An important new source for such a study has become available in the Von Jungkenn Papers now in the William L. Clements Library; see H. H. Peckham, *Guide to the manuscript collections in the William L. Clements Library,* 146–147, Ann Arbor, 1942.

BENJAMIN FRANKLIN AND ITALY SINCE THE EIGHTEENTH CENTURY*

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THAT Benjamin Franklin had some connection with Italy during his lifetime does not surprise anyone acquainted with the multifarious activity of the great American and with the dominant cosmopolitanism of eighteenth-century Western civilization. John Adams' grudging admission that "Franklin's reputation was more universal than that of Leibnitz or Newton, Frederick or Voltaire; and his character more beloved and esteemed than any or all of them," [1] can be supported with ample contemporary evidence from the Italian peninsula. One is likely, however, to be unprepared to hear that in Italy Franklin's fame and influence increased as the years passed, reaching a peak in the last half of the nineteenth century. The frequency with which Franklin's name is associated with various enterprises in the closing decades of the last century shows that his name had become a household word, a most unexpected phenomenon in a country that he never visited and which one would not ordinarily think of as receptive to Franklin's thought and personality. Rome and Milan named streets after him.[2] In 1872 a Biblioteca Circolante Frankliniana was established in Rome.[3] In 1881 an ardent social crusader of Milan launched a short-lived popular monthly christened after Franklin.[4] A Tipografia Frankliniana flourished in Rome between the years 1884 and 1887.[5] In 1892 Franklin's name was attached to an almanac published in Parma.[6] And, most eloquent of all tributes, parents were baptizing their children under the unorthodox name of "Franklin"![7]

This improbable turn of events is nevertheless thoroughly comprehensible when it is seen against the canvas of social, political, and economic life in nineteenth-century Italy. Immediately striking is the complete secularization of Franklin. For the Age of Enlightenment he had been above all a sublime scientist and one of the most admired of the catholic genus "philosophe." His electrical theory was quickly adopted and the great enthusiasm with which it was received and exploited in the peninsula accounts in large part for the early supremacy attained by Italy in electrical science, with Volta as the crowning genius. Franklin's inventions and sundry scientific observations—the stove, the lightning rod, the armonica, his comments on the action of oil on water, on the apparent preservative effect of Madeira wine on flies, and so on—attracted wide attention. Secondly, Franklin was for the eighteenth century a great statesman, the single-handed architect of the most exciting revolution of modern times. Contemporary Italian reaction to this aspect of Franklin is necessarily muted because of the presence of suspicious native and foreign governments; but the undertone of revolutionary excitement is there and becomes unmistakable, for example, in the poetry of such hotheads as Vittorio Alfieri and Giovanni Fantoni.

Obviously Franklin's appeal to the Italy of his day must have been for the most part limited to a comparatively small circle of erudites and idealists. This situation changes profoundly in the following century when Franklin the scientist is reduced to a mere episode of a great, popular success story, and the "philosophe" becomes a venerable educator, moralist, and benefactor of humanity.

Which is not to say that Franklin the statesman is forgotten. Although enthusiasms of a liberal

* The present article is a brief evaluation of part of a comprehensive study on Franklin and Italy supported to date by grants-in-aid from the American Philosophical Society, the John Simon Guggenheim Memorial Foundation, and by a research leave from Syracuse University.

[1] *The works of John Adams*, ed. C. F. Adams, 1: 660, Boston, 1850.

[2] Blasi, B., *Vie, piazze, ville di Roma nel loro valore storico e topografico*, 155, Roma, Bardi, 1923; Gatta, L., *Milano e i nomi delle sue vie: personaggi illustri e benemeriti—momenti storici*, 265–266, Milano, Bocca, 1897.

[3] *Statistica delle biblioteche: biblioteche dello stato, delle provincie, dei comuni ed altri enti morali (Ministero di agricoltura, industria e commercio: Direzione generale della statistica)*, 2: 115, 1894, Tip. naz. di G. Betero, Roma.

[4] *Beniamino Franklin: periodico mensile*, Anno I, Milano, Poncelletti, 1881.

[5] *Guida Monaci*, 1884 ff.

[6] Ferrari, A., *Strenna Franklin*, Parma, Battei, 1892.

[7] See the names Franklin Colamanico and Franklin De Grossi in Pagliaini, A., *Catalogo generale della libreria italiana*, 1847–1899, 1: 584, 729, Milano, Associazione tipografico-libraria italiana, 1901.

political hue were in even less favor with the established governments of Italy during the years of revolution than they had been in the previous century, there is undeniable evidence that the spirit of Franklin was much with the men of the Risorgimento. Given the apparent similarities between the Risorgimento and the American Revolution, it is little wonder that Italians often looked across the Atlantic for inspiration. Both countries initiated their wars of independence as weak, divided nations. Both had to depend upon the clever manipulation of essentially unsympathetic foreign powers to achieve their aims. Moreover, after the disillusionments of the French Revolution, the fired imaginations of the Italians turned sympathetically to the distant and dimly perceived American Revolution, ascribing to it a comforting purity of motive consonant with their own idealism. We are then not astonished to learn from a schoolmate of Cavour that the future premier, as a teen-aged jacobin, frequently had the name of Franklin upon his lips.[8] The youthful meditations of another important figure of the Risorgimento, Vincenzo Gioberti, later the champion of the neo-Guelf idea of unification, reveal intense admiration of Franklin as an almost miraculous reincarnation of the type of the ancient sage who presided over the birth of his nation and which the modern age had seemed incapable of reproducing until the appearance of Franklin.[9] Near the middle of the century a Neapolitan conspirator, Nicola Mignogna, collaborator of Mazzini and Garibaldi, veiled his nefarious activity as a member of a "carbonico-militare" sect under the alias of "Franklin." [10] Surely it was more than coincidence that the wooden sidewheeler which toward the end of August 1860 bore Garibaldi from Sicily to Calabria to initiate the triumphant march of the "Mille" against the Bourbon masters of southern Italy was named the "Franklin." [11]

In this connection something may be learned from the attitude of the censors toward politically indiscreet references to the great American statesman. True, Franklin rarely appears as a controversial subject in the records of the various censorships, a fact attributable no doubt to the care that writers took to avoid more than casual allusion to his political career. Kind fate furnishes one good example to illustrate what could happen when due caution was overstepped. In 1837 Antonietta Tommasini, an accomplished lady of Parma and wife of a famous physician, published in Milan a collection of Franklin's letters under the title, *Carteggio morale e letterario di Beniamino Franklin.* The tale of the anguish caused by one slender volume lay for nearly a century buried in the personal papers of the authoress preserved in the Biblioteca Palatina of Parma. Recently a librarian of that institution brought to light the main facts of her struggles with the Austrian censorship of Milan.[12] The pertinent documents are three manuscript copies of the *Carteggio* and a series of letters exchanged mostly with her mediator in Milan, Defendente Sacchi, himself a writer of some repute. Antonietta Tommasini had invited immediate trouble by proposing as her title *Carteggio politico e letterario.* The censor compelled her to change the "politico" to "morale." Her introductory notice on the life of Franklin was at first rejected outright because, as Sacchi reported, "in it there is too much savory talk of what Franklin did for independence and liberty, hydras for our censorship." Furthermore, the censor insisted upon expurgations in the Franklinian texts themselves. The unhappy Antonietta would have preferred to withdraw her book from publication, but commitments with the printer had gone too far. The volume finally did appear with the introduction "cruelly mutilated" and with the cuts in the text desired by the censor, involving in some cases the suppression of whole letters.

Interestingly, Sacchi remarks in one of his letters to Antonietta Tommasini that the Milanese censor had been given directions not to authorize any more biographies of Franklin. It is unfortunate that the archives of the censorship in Milan were destroyed at about the time of the Restoration: they would doubtless have contained information upon this point, as well as additional colorful details on the Tommasini affair.

Nevertheless, Franklin mattered primarily as an educator and moralist to nineteenth century Italy. This new importance was due in large part to the popularity of the famous preface to *Poor Richard's Almanac* for 1758, subsequently known as the *Way to Wealth.* The first inkling of the new fame that Franklin would enjoy is perceptible in the fortune

[8] Villari, P., *Scritti vari,* 487, Bologna, Zanichelli, 1894.

[9] Beniamino Franklin, in *Meditazioni filosofiche,* ed. E. Solmi, 413–414, Firenze, Barbèra, 1909.

[10] Pisacane, C., *Epistolario,* ed. A. Romano, 483 ff. and *passim,* Milano, Soc. an. ed. Dante Alighieri, 1937.

[11] Garibaldi, *Memorie autobiografiche,* p. 375, Firenze, Barbèra, 1888.

[12] Boselli, A., Beniamino Franklin, Antonietta Tommasini e la censura austriaca di Milano, *Rassegna storica del Risorgimento* (Roma), **19**, fasc. 4 (XIX Congresso sociale di Modena): 265–281, 1932.

of the attractive cento of proverbs before the close of the eighteenth century. In 1775 the Milanese polygraph, Carlo Amoretti, published the first Italian translation of the little work from a copy transmitted directly by Franklin.[13] The standard bibliographer of Franklin, P. L. Ford, was able to unearth a total of nine Italian printings of the *Way to Wealth* up to the end of the nineteenth century.[14] The present writer has established that this little work was published on no less than eight occasions before the end of the eighteenth century alone. Contemporary comment shows, however, that Italians were themselves unaware of what was happening, for the diminutive masterpiece was generally dismissed as an attractive caprice of the great "philosophe," or, at best, was taken politically as a key to the character of the Americans in explaining the success of the Revolution.

The great vogue of the *Way to Wealth* in nineteenth century Italy is a full realization of the trend of the preceding period and draws attention to important underlying social and political developments. In one form or another the little chaplet of homely maxims was published more than seventy-five times before the century was out. It often appeared separately as an almanac, an epithalamium, or as a bit of popular social propaganda. It was almost invariably a part of the numerous Franklin miscellanies. It was frequently inserted, integrally or otherwise, into many of the periodicals for popular edification that mushroomed during the century. If we can believe the title page data, a version of the *Way to Wealth* published by the editor Silvestri in Milan in 1814 went through one hundred one editions by 1817! Conspicuous personalities interested themselves in the translation and promulgation of Father Abraham's saws—the Arcadian poet, Giovanni Fantoni; the Lombard economist, Giovanni Tamassia; the philologist, Francesco Zambrini; distinguished writers and educators such as Lorenzo Valerio, Michele Sartorio, Francesco Longhena, and Giuseppe Sacchi. It is doubtful whether any native work was printed so frequently or was so widely known in the Italy of the nineteenth century as Franklin's *Way to Wealth*.

The success of Father Abraham's homily furnishes the clue to Franklin's enormous Italian popularity. The explanation is obviously to be sought in the rise of the middle class. Instinctively this group identified its own interests with national welfare and unity. Politically it was represented by moderates who believed that independence and unity would be the inevitable product of peaceful industrial, commercial, educational, and social progress, and who opposed such advocates of direct action as Mazzini. It was these enlightened and temperate bourgeois who enthusiastically accepted Franklin and did the most to popularize him.

At first glance the fervor with which Franklin was received is puzzling in the light of the tardy modern emergence in Italy of the capitalistic spirit and against the modest dimensions of the industrial revolution in that country. These great changes not only began much later in Italy than in other countries to the north, but they did not reach respectable proportions until some time after the unification. After the debacle of the Renascence, the peninsula had lapsed into a medieval social and economic torpor from which there was no awakening until the end of the eighteenth century. Then discriminatory tariffs imposed by dominant foreign powers, the fragmented condition of the country, lack of capital and basic raw materials, political uncertainties, tended to discourage enterprise throughout the most of the nineteenth century,[15] and the growth of the middle class was correspondingly slow and painful.

When the evidence is examined more closely, it appears that the principal reason for the surprising Italian popularity of the *Way to Wealth* lies precisely in the unfavorable circumstances under which the modern middle class arose. The bourgeoisie, dormant since the heyday of the Renascence, came to precocious new life under the powerful stimulus of northern nations before the native environment was ready to countenance the rebirth. With a self-consciousness beyond its years, the middle class sought to justify its ill-understood standards of conduct. The Italian bourgeois looked in vain to his Church for moral support: the elements of the earthly creed he lived by—the doctrine of the earthly calling, self-reliance, activity, thrift, and so on—either had little or no place in the orthodox scheme of moral values, or else were diametrically opposed to the Christian virtues.[16] Protestantism, and in France, for ex-

[13] *Scelta di opuscoli interessanti* (Milano), 1: 83–105, 1775.

[14] *A list of books written by, or relating to Benjamin Franklin*, xxxi, Brooklyn, N. Y., 1889.

[15] For background see, for example, Morandi, R., *Storia della grande industria in Italia*, Bari, Laterza, 1931.

[16] For a consideration of the position of the Catholic Church with respect to capitalism, see Fanfani, A., *Catholicism, Protestantism and Capitalism*, London, Sheed and Ward, 1935.

ample, even the Catholic Church, had met the new standards in their infancy, and through the years functional compromises had been evolved. Such was not the case in Italy where the capitalistic spirit had waned with the collapse of the Renascence, and a more conservative Church clung firmly to traditional and medieval concepts of man's destiny. The great Italian liberal Catholic movement of the last century that attempted to swing the Church into harmony with secular notions of progress failed.[17] It is then easy to see why the middle class should have so eagerly seized upon Franklin as its spotless hero and the *Way to Wealth* as an opportune crystallization of its practical ethics.

Apart from its service in filling a moral void, the *Way to Wealth* was frequently printed by the middle class as social propaganda. Viewing the current of Franklin literature of the last century, one has the definite sense that, more than a complacent justification of the status quo, it is the dynamic expression of a great aspiration. The nation stirred restlessly with a great yearning to be united, to enjoy the benefits that material progress could bestow. The future of Italy lay in increasing the ranks of the middle class, and the most serious obstacle to such a happy development was obviously the lack of a correct attitude. Long Jesuitic control of the schools had provided the few who could attend with an arid literary training and a transcendental set of moral principles. The masses lived in extreme ignorance and moral stagnation, with all initiative crushed by the medieval routine to which life had degenerated since the Renascence. The failure of the first sporadic, idealistic uprisings brought home to the leaders of the Risorgimento that the best hope of success lay in the education of the common people, in opening before their eyes new horizons of personal development and a decent earthly existence within the reach of any individual who chose to apply his energy in the right way. In this heroic age of the economic revolution in Italy the watchwords were work, thrift, perseverance; and the *Way to Wealth* became the gospel of the new order.

Once this genial little treatise had attracted attention to the moral Franklin, the Italians were not long in discovering his other writings applicable to their needs. Characteristically, the three Franklin miscellanies that had appeared in the eighteenth century almost entirely overlooked the moral side. The *Scelta di lettere e di opuscoli del signor Beniamino Franklin,* compiled by Carlo Giuseppe Campi (Milano, 1774), was almost exclusively scientific in content. Of the two collections prepared in 1783 by the tireless Venetian priest, Pietro Antoniutti, the *Opere filosofiche* were completely scientific, and the *Opere politiche,* while they did include the *Way to Wealth,* were otherwise concerned with Franklin's more serious political and economic writings. But the title of the first miscellany published in the nineteenth century, *La scuola della economia e della morale ossia Avvertimenti a tutti quelli che desiderano essere ricchi, sani e virtuosi: opuscoli di Beniamino Franklin* (Pavia, 1825), reveals a complete shift in emphasis. In 1830 there were published in Pisa, and again in Volterra four years later, the *Saggi di morale e d'economia privata estratti delle opere di Benjamino Franklin,* a collection that remained more or less standard until the Florentine printer, Gasparo Barbèra, produced the *Opere minori* in 1870. In all, more than a dozen economico-moral Franklin miscellanies appeared during the nineteenth century.

At least mention must be made of the fact that, in addition to the *Way to Wealth,* many pieces of moral import are found separately, either as pamphlets, or inserted into periodical publications, for example, the famous story of "The Whistle," the "Morals of Chess," "Advice to a Young Tradesman," "The Art of Procuring Pleasant Dreams."

If the *Way to Wealth* was the gospel of a new order, Benjamin Franklin was its saint. His career was the supreme exemplification of the brave new ideal, and his biography became one of the most frequently circulated. This was not, however, in the original form of the *Autobiography,* which was completely translated only twice in the nineteenth century, in 1830[18] and 1869.[19] Doubtless the bulk of the original made it too expensive for wide distribution. The Barbèra edition of 1869, appearing when typographical advances made possible a moderate price, enjoyed a considerable success, passing through eight editions before the end of the century. But usually it was in the form of popular reductions that the career of Franklin became known. The illustrious life

[17] Landogna, F., *Saggio sul cattolicismo liberale in Italia nel secolo XIX,* Livorno, Giusti, 1926.

[18] *Vita di Beniamino Franklin scritta da lui medesimo: prima traduzione italiana,* tr. G. Tamassia, Bergamo, Mazzoleni, 1830.

[19] *Vita di Beniamino Franklin scritta da sè medesimo: nuovamente tradotta dall'edizione di Filadelfia del 1868 ricavata per la prima volta dal manoscritto dell'autore da Pietro Rotondi,* Firenze, Barbèra, 1869.

was issued separately in small brochures, inserted into the introductions of the miscellanies, almost invariably appeared in the numerous collections of edifying biographies, and, like the *Way to Wealth*, appeared frequently in the popular magazines. The array of names of those who undertook to make Franklin known to the masses is impressive: the poet, Cesare Arici; the Milanese polygraph, Cesare Cantù, and his brother, Ignazio; the Florentine educator, Pietro Thouar; Giuseppe Sacchi, already mentioned in connection with the *Way to Wealth;* Giuseppe Torelli, journalist, friend of Cavour and secretary of Massimo D'Azeglio; Giovanni De Castro, Milanese author and son of Vincenzo, a well known educator; Bartolomeo Aquarone, active in the Risorgimento and then Professor of Law in the University of Siena; the Bolognese writer, Salvatore Muzzi; the Milanese patrician and art connoisseur, Girolamo D'Adda; the Genoese editor and educator, G. B. Cipani. These are but a few of the more distinguished popularizers of Franklin: more often than not, the accounts were the humble work of anonymous laborers of the pen.

If any one person deserves to be singled out for yeoman service in propagating the legend of Franklin, it is Cesare Cantù. This historian and man of letters, now all but forgotten, was the McGuffey of Italy. As a struggling young teacher he composed, in the years 1836 and 1837, a series of four immensely successful progressive readers upon which several generations of Italians were nurtured: *Il buon fanciullo: racconti d'un maestro elementare; Il giovinetto drizzato alla bonta al sapere all'industria; Il galantuomo: libro di morale popolare;* and *Carlambrogio di Montevecchia.* Even a cursory perusal of these little volumes, often bound together as a school text under the title of *Letture giovanili,* renders superfluous the statement of a contemporary and friend that Franklin was one of Cantù's favorite heroes.[20] *Il giovinetto,* for instance, contains a typical inspirational chapter, occasionally reproduced separately, entitled, "Benjamin Franklin, or Work and Save." It opens as follows:

> Listen, good youth: you keep repeating to me that you will never amount to anything in this world because you were born in humble circumstances; that without inheritance, without well-to-do parents, without influential recommendations, you are doomed to drag out your days in obscurity without ever succeeding in doing anything useful to yourself or to others. But don't you know that you have at your disposal two large bits of capital? They are industry and economy, capital that will bring you more than any inherited wealth. With nothing more than these, Benjamin Franklin, from most humble status raised himself to be one of the most famous men in the world.
>
> Do you want to know his story? Listen to me. . . .

Whereupon follows a thumbnail biography developing the motif of the self-made man. In the appropriate place appears a smattering of proverbs from *Poor Richard.* There are allusions to Franklin's scientific accomplishments. There is the customary mention of his philanthropies in Philadelphia—the fire company, his activity in establishing schools, the insurance company. A few sentences treat of his mission in France. The sketch closes fittingly with an account of the famous codicil to Franklin's will. Cantù concludes:

> You see then, good youth, that Franklin was at the beginning a lad as obscure as yourself. Not wealth, nor influential relatives, nor protectors, but his own merit, the will to work and to save, the good use of time and honest conduct transformed the wretched boy into a person of great wealth, of the highest honors, and of a glory that never will perish . . .; and his name will live among those who won the truest glory, that of benefactor of his fellows, his country and the whole human race.

An essay, "Beniamino Franklin," written by Cantù in 1836, became unquestionably the best known single study of the great popular hero. In 1841 it was republished in Milan as part of the *Galleria contemporanea o Storia biografica degli uomini grandi d'ogni nazione* (ed. F. Ambrosoli and G. B. Battaglia). The following year it appeared in the Milanese periodical, *Rivista europea* (vol. V, i). In 1845 it was inserted into one of the supplementary volumes of Cantù's *Storia universale* (vol. XXXIV), a work that went through multiple editions and was translated into several foreign languages. In 1867 the author appended the essay to his *Vite parallele di Mirabeau e Washington,* a book republished in 1870, 1873, and 1878. The same essay is found in Cantù's *Racconti storici e morale* (Milano, 1868; third edition in 1878), and in his *Racconti alla buona* (Milano, 1888). Finally it was printed as a pamphlet entitled, *Beniamino Franklin: biografia, massime e consigli* (Milano, 1888), for the benefit of the pension fund of a typographical brotherhood of Siena.

[20] De Marchi, E., in *Dizionario di pedagogia,* ed. A. Martinazzoli and L. Credaro, 1: 220, Milano, Vallardi (n. d.).

In 1870 Cantù composed still another treatment of Franklin for a chapter of *Buon senso e buon cuore,* a volume conceived as an adult crown to the series of the *Letture giovanili,* and which went through five editions before the end of the century. This chapter was republished separately in Milan in 1881 as *Franklin: breve storia.*

Interestingly, Cantù made frequent use of the gnomic technique that he assumed was the key to Franklin's efficacy, even to the point of flagrant imitation. The protagonist of his *Carlambrogio di Montevecchia,* for example, a keen, philosophic traveling peddler whose wont it was to ply his eager listeners with aphoristic wisdom, is obviously a Catholicized and Italianized first cousin to Poor Richard. In *Il giovinetto* there appears repeatedly a sententious "Omobono delle parabole" whose very name betrays his kinship to the "Buonuomo Riccardo."

The sad truth must be admitted that there is a monotonous similarity in the corpus of literature having to do with Franklin. Even certain virtues of style in the case of a capable writer such as Cantù cannot entirely redeem the story from banality. In short, the subject is of more interest for its social implications than for the literature it inspired. It is strange, nonetheless, that a theme as prominent as Franklin seems never to have entered into a major creative literary work. Perhaps it was because the aspects of Franklin that best lent themselves to both sustained and inspired treatment were those that the censorship could not countenance. Only the scientific Franklin, symbolized by the lightning rod, and all that remarkable invention suggested in the way of man's progress in his battle against nature and superstition, was a topic both unrestricted and possessed of sufficient overtones to inspire a certain amount of poetry. The didactic poet, Cesare Arici, generally considered the last of his strain, left incomplete at his death in 1836 a grandiloquent composition, *L'Elettrico,* in which Franklin is evoked.[21] Cesare De Horatiis, an active educator and liberal of the Risorgimento, wrote a sonnet, "Beniamino Franklin," expressing exultation at the victory over nature represented by the lightning rod.[22] Another sonnet composed in 1876 by one of the better secondary poets of the last part of the nineteenth century, Giuseppe Manni, entitled "Sopra il genio di Franklin scolpito da Giulio Monteverde," inspired by the statue described below, expresses sentiments similar to those of Cesare De Horatiis.[23] In 1873 one S. Ghiron, who must have been moved likewise by the statue of Monteverde, wrote a lengthy poetic account of the invention of the lightning rod, "Il genio di Franklin: versi." [24]

A rare instance of Franklin as a political symbol is the poem, "Il pronostico," by Carlo Aurelio Bossi, a figure prominent in the events of Napoleonic Italy. In this poem, written in 1830 during the dark days of the Restoration, the author refuses to believe that the spark of freedom which recently glowed so brightly can be dead, and he summons Franklin to prophesy a new era of justice and universal brotherhood.[25]

Franklin enjoyed somewhat better fortune in the figurative and plastic arts, especially engraving. With the development of the press and the growth of literature for the masses, engraving came into its own as a means of presenting illustrative matter to the public. As a result, the numerous publications having to do with Franklin were often accompanied by at least his portrait. The pictorial Franklin, interpreted usually with the aid of French models, elicited the attention of many engravers of the nineteenth century—Michele Bisi, of the school of Giuseppe Longhi; Innocente Migliavacca of Piacenza; Giovanni Antonio Sasso; Saverio Pistolesi; Carlo Raimondi, director of the School of Engraving in Parma; Giuseppe Bonatti —to mention only a few.

Franklin had always been a grateful theme for sculptors. The crop of Franklin statuary that appeared in Italy during the 1870's proves that, after so much talk about the great American, sculptors considered him a good risk. The most noteworthy of these representations is the "Genius of Franklin" by Giulio Monteverde, one of the best sculptors of the second half of the century. In 1872, at the second National Exposition of Fine Arts in Milan, he unveiled his unorthodox creation to the startled gaze of a public long accustomed to the unadulterated classic and academic manner. An aërial sprite, symbolic of the youthful vigor of Franklin's thought, gracefully entwined about the shaft of a lightning rod, is perched on a housetop and playfully guides a bit of lightning with his fingers into the chain that drops from the rod. The statue set off a bitter polemic, in which the enemies of realism were not beneath caricaturing Monte-

[21] *Opere,* Padova, Coi tipi del Seminario, 1: 361–384, 1858.

[22] Campolieti, N., *Cesare De Horatiis, un educatore del Risorgimento d'Italia,* 117, Milano, Cogliati, 2nd ed., 1903.

[23] *Rime,* 260, Firenze, Chiesi, 1884.

[24] *Strenna del giornale 'Il Monferrato' pel 1873,* Casale, Tip. del giornale "Il Monferrato," 1: 133–151, 1873.

[25] *Poesie edite e inedite,* 2: 328, Firenze, Barbèra, 1861.

verde's sprite as a spitted pigeon. The work nevertheless carried off the first prize, was purchased by the Khedive of Egypt, and is today presumably in Cairo. In grateful recognition of the fact that the "Genius of Franklin" had brought him his first true fame, Monteverde later executed a copy in travertine and placed it on the roof of his studio in the Piazza dell'Independenza in Rome where it may still be seen.

The Centennial Exposition of 1876 in Philadelphia provided Italians a welcome opportunity to display elaborations in stone of the theme of Franklin. Three statues, all from Florence, illustrated well known details of the great man's life. Pasquale Romanelli, erstwhile follower of Mazzini and grandfather of the present internationally known sculptor, Romano Romanelli, presented a statue on the subject "Franklin and His Whistle," as did the firm of Pietro Bazzanti. And Emilio Zocchi, father of the more famous Arnaldo, contributed "Benjamin Franklin in His Youth," representing him as setting up his first types.[26]

In contrast to the arts of engraving and sculpture, Franklin seems to have held little appeal for painters. A report of a public exposition in Brescia in 1840 mentions "a Franklin portrait, in tableau, by the worthy youth, Luigi Ciampini." [27] An account of the progress of a popular library of Trento lists among its benefactors one Count Giampietro Pompeati who had donated for the reading room a portrait of Franklin "by him artistically portrayed." [28] Nothing further is known of the artistic merit of these paintings, nor, in fact, whether they have survived.

The Pompeati portrait does serve as evidence, however, to illustrate the special influence that Franklin had in the formation of popular circulating libraries in Italy. It was no accident that the Biblioteca Circolante Frankliniana in Rome was so named. Nearly all the popular accounts of Franklin's career point to the philanthropic enterprises he successfully engineered in Philadelphia by intelligent application of the principle of association —the fire company, the local militia, the hospital, and, of course, the library. The latter example was a great inspiration to the movement that led to the creation of numerous popular circulating libraries in the last decades of the nineteenth century. These libraries, incidentally, repaid Franklin for his inspiration by spreading still further his name and fame, for an examination of their catalogues shows that he was almost invariably well represented.

Another field in which Franklin naturally exerted a special influence was that of typography. As in the case of the Biblioteca Circolante Frankliniana, the founding of a Tipografia Frankliniana in Rome was but a culminating event. Even during Franklin's lifetime Italian printers clearly felt themselves in more than ordinary sympathy with the great scientist and statesman who had begun his career as a printer, witness his exchanges with Bodoni and the Cremonese printer, Lorenzo Manini. This kinship that printers felt with Franklin doubtless tended to make them more than acquiescent to the spread of Franklin literature, and there is good evidence that on many occasions it was they who took the initiative. We may mention in this connection Niccolò Bettoni, one of the new breed of printers concerned with reading matter for the masses, who contributed to the flood of Franklin matter through his biographical collections,[29] and who, significantly, often used as an emblem for his publications a medallion representing the bust of Franklin, with the legend, "Franklin decus artis typographicae." [30]

One of the most interesting cases of the influence of Franklin is the career of Gasparo Barbèra, founder of the illustrious Florentine publishing house that still bears his name, and editor of the translations of the *Autobiography* and minor writings of Franklin that became the standard versions.[31] Gasparo Barbèra never tired of telling how profoundly he had been affected by Franklin's writings and example. About the year 1848 he was by his own admission still an aimless employee of the printer Le Monnier and sunken into evil ways, when by pure chance he came by a copy of the famous *Autobiography*. The transformation

[26] *Official catalogue of the international exhibition of 1876. Pt. II: Art gallery, annexes, and out-door works of art,* 111, 114, Phila., Nagle, 5th ed., 1876.

[27] *Commentari dell'Ateneo di Brescia,* 239, 1840.

[28] Alessandrini, P., *La biblioteca popolare di Trento nel ventennio 1869–1889: memorie e documenti,* 31, Borgo, Marchetto, 1891.

[29] *Vite e ritratti di cento uomini illustri,* Padova, 1815. The twenty-five fascicles that were completed of the original prospectus were republished as *Vite e ritratti di venticinque uomini illustri* in 1822 and 1823. This collection contains the "Vita di Benjamino Franklin scritta da Cesare Arici" and the portrait by Bisi. Another collection of *Vite e ritratti dei uomini celebri di tutti i tempi e di tutte le nazioni,* containing an anonymous biography of Franklin and the portrait by F. Zuliani, was printed in Milan first in 1820–1822, and again in 1828–1829.

[30] *Cf.* Barbèra, P., *Editori e autori: studi e passatempi di un libraio,* 81, Firenze, Barbèra, 1904.

[31] The *Scritti minori di Beniamino Franklin,* also translated by Pietro Rotondi, were published in 1870.

that took place was later viewed by Gasparo as practically a metempsychosis. "Just as they say that the meat we eat becomes the blood of our body," he remarks in his memoires, "so I believe that I have gradually become, by dint of reading and meditating upon Franklin, the hundredth part of him."[32] His *Memorie,* correspondence and personal copies of Franklin's works with marginal annotations afford interesting commentary.[33] He took especial delight in remarking the parallels between his own career and that of Franklin. Both came from humble working families and both left their native cities to make their fortune. Both found their first employment with printers, Franklin with Keimer, Barbèra with Le Monnier. Franklin was fired by Keimer and Barbèra by Paolo Fumagalli under similar circumstances. They had common tastes in education. Both trained printers and then set them up in other cities. And so on.

Gasparo Barbèra's gratitude to Franklin was boundless:

> I ought to raise a statue to Franklin because he illuminated the dark way I was in. He offered me the elements with which to strengthen my character, and then he contributed to the development of my mind, which, without being anything unusual, was able to show simply what it was. Afterwards, I even derived material gain from him by having Sig. Pietro Rotondi translate his Life and minor writings, which are read as new, amusing and extremely useful books.[34]

There is other proof of the reality of Franklin's influence upon Gasparo Barbèra—for example, the engraved portrait of his idol that never left his bedside. But the most eloquent token of the sincerity of Gasparo's admiration is his behavior with respect to his favorite son and successor, Piero. He introduced Piero to Franklin's writings at a tender age. Then, in 1866, when Piero was eleven years old, the firm moved to its present site. Both for decorative and inspirational effect, Gasparo had had statues made for distribution about the offices and working quarters. The first to be put in its place was that of Franklin, and for the occasion little Piero, at his father's suggestion, wrote a tiny biography, setting the type with his own hands![35]

With the close of the nineteenth century Franklin's sun begins to set, to judge from the products of the press. Again the probable cause is to be sought in the social and economic backgrounds. The industrial revolution had by that time reached full development, attended, in Italy at least, by more than an ordinary dose of disappointment. The lack of raw materials imposed obvious limitations to industrial development; and overpopulation, the country's perpetual curse, led to murderous competition in which it was the rare individual who could succeed. As the chasm widened between proletariat and middle class, the mirage of the "self-made man" that had been such a potent incentive in the heroic age of the economic revolution tended to evaporate before the realities, and the individualistic ideal of *laissez-faire* was replaced increasingly by the principle of group action on the part of the dispossessed.

The present century confirms the trend of the closing years of the nineteenth. The moral Franklin is all but forgotten. There are but two printings of the *Way to Wealth,*[36] two popular miscellanies.[37] The once famous biography is buried in the thick tomes of dictionaries and encyclopedias. The *Autobiography,* relegated to the dreary limbo of the "classics," maintains a doubtful existence.[38] Apart from the *Autobiography,* Franklin can be found embalmed in anthologies and anecdotal dictionaries. Even the moderately well educated Italian of the present generation is hard put to it to recall that Franklin was an American who invented the lightning rod. The only definite compensatory modern tendency is a new scholarly interest in Franklin as a scientist.[39]

[32] *Memorie di un editore,* 60, Firenze, Barbèra, 1883.

[33] I take pleasure in acknowledging the courtesy of Dr. Filippo Tedeschi, present manager of the Barbèra publishing house, who granted me access to the material of the archives.

[34] *Memorie di un editore,* 60.

[35] *Beniamino Franklin: in occasione di porre il busto di Beniamino Franklin nella stamperia di Gasparo Barbèra,* Firenze, 1866. It is a charming child's interpretation, Piero's wry remarks in later years notwithstanding.

[36] *La maniera di farsi ricco di Beniamino Franklin: prefazione di un vecchio almanacco di Pensilvania intitolato "Il povero Riccardo fatto benestante,"* Udine, Gambierasi, 1910; and *Beniamino Franklin ovvero Dell'infallibile maniera di farsi ricco,* ed. G. Corso, Milano, Corso, 1947.

[37] *Beniamino Franklin: pagine morali,* ed. A. Biancotti, Torino, Paravia, 1924; and *Opere morali,* Milano, Sonzogno, 1926, a new edition of the collection that was first published in 1882.

[38] The Barbèra edition is still available in the fourteenth printing of 1928. Other translations of the *Autobiography* have been made: by Guido Fornelli (Firenze, Sansoni, 1925); Gino Valori (Milano, 1st. tip. ed., 1935); and Antonietta Pettoello Regis (Torino, *Unione Tipografico-Editrice Tornese,* 1936; reprinted in 1948).

[39] For example: Martini, T., Beniamino Franklin elettricista, *Rivista di fisica, matematica e scienze naturali* (Pavia), **20**: 3-17, 1909; Volta, Z., Alessandro Volta e Beniamino Franklin in carteggio epistolare, *Voltiana* (Como), **2** (8): 4-5, 1927; and M. Gliozzi dwells upon

The last translation of the *Way to Wealth*, the *Beniamino Franklin ovvero dell'infallibile maniera di farsi ricco* (Milano, 1947), is an unexpected recrudescence of the philosophy of Poor Richard that comes to enliven the rather drab spectacle of Franklin's recent lot in Italy.[40] Toward the end of the year 1946 the Commendatore Antonio De Faveri-Tron, a philanthropically inclined shoe manufacturer of the little town of Cornuda, a short distance north of Venice, became much concerned with the listlessness which had settled upon his three hundred employees since the last war. Their lackadaisical attitude he was inclined to attribute to the "impersonal vastness of modern life and the sluggishness of our manner of thought and feeling, with the consequent negation of those values that until yesterday ruled our day and made us happier." [41] Something should be done to break the lethargy. At the suggestion of his editor friend, Professor Giuseppe Corso of Milan, he obtained a copy of the Barbèra edition of the famous *Autobiography*, read it, and was much impressed. In it he saw the remedy for the attitude he deplored: "Let us return to the dear and useful teachings of Benjamin Franklin and let us inculcate within ourselves and our workers the conviction that the only true wealth is and will remain the moral one; and in the end we shall feel we are the better for it." [42] He then commissioned Professor Corso to prepare a "strenna" for the New Year, with the wish "that the spirit of Benjamin Franklin may return among my workers in its most beautiful light and teach them that the true life is the practical one, devoid of prejudices, perfumed with that good sense of his that, if still followed, by bettering individual and private life, will in the long run better also social life." [43]

With Commendatore De Faveri-Tron's approval, Professor Corso prepared a colorful little brochure containing a preface by the Commendatore, his own careful interpretation of the life of Franklin, and then an interesting and intelligent adaptation of the *Way to Wealth*.

Fellow worker: [the kindly Commendatore addresses himself to his employees in the Preface] at this moment in which the world is so disturbed and upset we offer you this humble but precious little book.

Democracy, justice, liberty are ideals to which everyone aspires.

But if you expect everything from outside, you will remain confused, you will understand little, construct little.

Use your own forces, build yourself. Your future is in your own hands, in what you do. . . .

He then urges his workers to take to heart the example and precepts of Franklin, to cherish as a treasure the little book that is being presented to them.

Benjamin Franklin would have been highly pleased to know that the chaplet of proverbs he transmitted to Carlo Amoretti for translation in 1775 would retain sufficient "attualità" to be evoked a century and three quarters later as a guide in the moral maelstrom that followed Italy's greatest national disaster.

The fortune of Franklin in Italy appears as an unexpectedly rich chapter in the evaluation of the impact of American civilization upon the rest of the world, a topic that has only recently begun to receive attention. Taken in the triple aspect in which he was known in Italy, as scientist, statesman and moralist, Franklin's reception in the first two capacities, while noteworthy, is by and large what might have been anticipated. On the contrary, his success as a moralist in the last century seems to be something quite out of the ordinary and a fact of considerable significance for the cultural historian. More than a gratifying welcome extended to a great personality, Franklin's popularity as a moralist must be taken as a valuable barometer to important social conditions, specifically, the circumstances attendant upon the evolution of the modern Italian middle class. The unexpected vogue of the moral Franklin predicates extraordinary causes, which the nineteenth century Italian scene apparently provides. The final word, however, can be said only after thorough studies have been made of the fortune of Franklin in other countries.

[An attractive small bronze cast of the Monteverde statue as well as copies of many of the titles cited have been added to the collections of the Library of the American Philosophical Society as a result of Dr. Pace's roving commission. W. E. L.]

Franklin at length in his brilliant *L'elettrologia fino al Volta*, Napoli, Loffredo, 1937.

[40] I am much indebted to the editor, Professor Giuseppe Corso, who provided me with complete information regarding the genesis of the little pamphlet, including the originals of his correspondence with Commendatore Antonio De Faveri-Tron.

[41] Letter, De Faveri-Tron to Corso, Cornuda, 12 September 1946.

[42] *Ibid.*

[43] Letter, De Faveri-Tron to Corso, Cornuda, 19 October 1946.

THE PEALE PORTRAITS OF BENJAMIN FRANKLIN*

CHARLES COLEMAN SELLERS

Curator of Dickinsoniana, Dickinson College

CHARLES WILLSON PEALE first met Franklin in the summer or autumn of 1767.

> When I was in London studying painting with Mr. West . . . I wanted to be introduced to Dr. Franklin, and not knowing who I could ask the favor of an introduction to the Doctor, I determined one day to call on him.

He found Franklin at home,

> and in the dress of the picture now in the Room of the Philosophical Society in Philadelphia. I asked the Doctor if he remembered the name of Charles Peale who formerly lived in Maryland. The Doctor replied that he remembered him well. Then I told him that I was the son of that Charles Peale—and having been in London some few months, and not finding any person offering to introduce me to him, "and having seen by the letters left by my father which had passed between you and him, I have taken the liberty of waiting on you." I then acquainted him that [with] the desire to improve myself in painting I visited Great Britain, and was kindly received by Mr. West. The Doctor was very friendly to me; shewed me his experiments which he was then making, and desired me to call on him at any of my leisure moments and he would be always glad to see me.

In a reminiscent mood, Peale jotted this account of the meeting into his diary of 1818, half a century after the event. In the diary of 1767, he noted it only with a small, quick pencil sketch of the philosopher seated in his study, in which, while the face is too small for a likeness, one recognizes easily "the dress of the picture now in the room of the Philosophical Society"—Peale's own copy of the famous "Thumb Portrait" by David Martin.

That copy of the Martin picture is Peale's first Franklin portrait, though the exact date at which he made it is open to speculation. Franklin's will dates the original as of this very year, 1767. A Scottish friend of Franklin, Robert Alexander, of Edinburgh, had commissioned the Scottish painter, Martin, to paint a portrait that would commemorate the Philadelphian's favorable criticism of certain papers submitted to him for comment. Martin's picture shows the Doctor in a studious pose, seated, chin on thumb, examining the manuscript. A large bronze bust of Newton on the table before him suggests that the papers are of a scientific cast. The painting pleased Franklin so well that he had a replica made for his Philadelphia home. In the replica, however, he ordered one change. Instead of a carved and gilded, throne-like chair, the replica shows him seated in one with a plain, rounded back, upholstered in a material similar to that which covers the table. In 1772 Martin made a second replica for the Alexander family, following the more ornate original. A curious train of circumstances was to bring all three canvases to America, the original and Franklin's replica both coming to Philadelphia. The two types, with gilded or plain chairs, have been reproduced in a succession of copies, beginning with that by Charles Willson Peale.

Had he asked for it, Peale would certainly have had a chance to copy the new picture then and there, or could have obtained a sitting from life as easily as Henry Benbridge did a few months after Peale's return to Maryland. "I waited upon Dr. Franklin with your letter of recommendation," Benbridge wrote to his step-father, January 23, 1770, "and he said any service he could be to me, he would do with the greatest pleasure. I am now preparing for the exhibition; Mr. Coombs . . . I have made choice of for the subject of one of my pictures and I believe I shall do Mr. Franklin for the other, for these two gentlemen are so exceedingly well known the making of strong likenesses will be a great means of recommending me to business." [1]

Benbridge was born and bred to the best colonial society. Peale had been reared in very humble circumstances, and was humble in approaching these great figures. He went back to Annapolis with the likeness of but one celebrity to show, his life-size portrait of William Pitt—painted not from life but from the bust by Joseph Wilton. So, at least, one must judge from the lack of any refer-

* Research was carried out with the aid of grants from the Penrose Fund of the American Philosophical Society.

[1] Rutledge, Anna Wells, Henry Benbridge (1743–1812?), American portrait painter, *Amer. Collector* **17** (9) : 10, 1948.

ence to a portrait in the subsequent exchange of letters between the diffident painter and the kindly scientist and statesman.

We know that just before leaving London, Peale showed a proof of his mezzotint of Pitt to Franklin, who commended the likeness.[2] And among his papers in the Library, we find the following draft of a letter, undated and unaddressed, but clearly to Franklin.

In compliance with that promise that I had the honor to make you when I was about leaving London, I now assume the Liberty of a correspondent, in addressing this letter to you. I ever return a grateful sense of the respect you shewed, and the notice you took of me when in England. Marks of respect of this nature make the strongest impressions on my mind, occasioned perhaps from my particular circumstance—early in life being deprived of a Father and not being born to an affluent fortune, nor connected by family relation to the great. I have hitherto been indebted, for the small rise I have made in the world, to the unsolicited notice and respect of a number of Gentn. who have honored me with their friendship, amongst whom my aspiring ambition would fondly have the honor of ranking you.—Since my return to America the encouragement and patronage I have met with exceed my most sanguine expectation, not only in Maryld. which is my native place but also in Philadelphia I have had considerable business for which I was very generously rewarded, and my vanity much flattered by the general approbation which my performance hath hitherto met with.—The people here have a growing taste for the arts, and are becoming more and more fond of encouraging their progress amongst them. I fondly flatter myself they will here find patronage, and an Asylum, when oppression and tyranny shall perhaps banish them from seats where they now flourish. . . .

There is little here of the stuff of which Poor Richard was made. But Franklin replied with a warmly characteristic letter, the original of which the Society had the good fortune to acquire in 1946.

London, July 4, 1771

Sir,

I received your obliging Letter of April 21, and it gave me great Pleasure to hear that you had met with such Encouragement at Philadelphia, and that you succeed so well in your Business in your native Country. If I was to advise you, it should be, by great Industry & Frugality to secure a Competency as early in Life as may be: For as your Profession requires good Eyes, cannot so well be follow'd with Spectacles, and therefore will not probably afford Subsistence *so long* as some other Employments, you have a Right to claim proportionably larger Rewards while you continue able to exercise it to general satisfaction.

The Arts have always travelled westward, and there is no doubt of their flourishing hereafter on our side of the Atlantic, as the Number of wealthy Inhabitants shall increase, who may be able and willing suitably to reward them, since from several Instances it appears that our People are not deficient in Genius.

You have my best Wishes for your Prosperity & Happiness, being with great Regard, Sir

Your faithful humble
Servant
B. Franklin.

A year later, in the summer of 1772, we find our painter in Philadelphia, "making a trial of how far the arts will be favored in this city," with an exhibition of his best work—"a whole length," his two excellent three-quarter lengths of Mrs. John Cadwalader and Mrs. John Dickinson, the half length of David Rittenhouse now at the University of Pennsylvania, "a lady from Lancaster" who was probably Mrs. Paul Zantzinger, a Quaker lady, "very perty" in her Quaker dress, and some miniatures. James Peale was with him as a pupil. "My Brother," he wrote after describing the exhibition, "with a little of my assistance has finished a fine copy of a Venus which West copied from Titian and is now making a copy of a fine piece of Mr. Franklin."[3]

The note of praise, "a fine piece," with its omission from the list of the exhibition, indicates that Peale's own work was not being copied. Henry Benbridge had just left Philadelphia for Charleston in May, and was still dividing his time between both cities. He was on friendly terms with Peale and it is conceivable that the copy was from his Franklin portrait of 1770. But more probably, the Peales had borrowed Franklin's replica of the Martin portrait from his Philadelphia home.

Charles Willson Peale was very responsive to praise, and even the friendly notice of a prominent person made, as he had said, "the strongest impression on my mind." That warm reply to his letter would easily have moved him to acquire the portrait of so distinguished a friend, while its receipt could have occasioned a call at the Franklin house and a first view of Martin's picture. It seems most probable, therefore, that the Peale copy from Martin, now hanging in Philosophical Hall, was painted in 1772, by James and Charles Willson

[2] Hart, C. H., Charles Willson Peale's allegory of William Pitt, *Proc. Mass. Hist. Soc.* **48**: 299–300, 1915.

[3] To John Beale Bordley, July 29, 1772.

Peale—in which case that "a little of my assistance" may well contain an understatement.

Four years later, we have another glimpse of the picture. Peale had come to settle permanently in Philadelphia in December, 1775. Franklin had returned from England some months before. On New Year's Day, 1776, he loaned the painter a French work on the philosophy of history. Peale's diary, remarkably complete in these months before Franklin's departure for France, October 26, 1776, mentions no painting. Yet his exhibition in that summer had Franklin's portrait in it. "Peale has taken General Washington, Dr. Franklin, Mrs. Washington, Mrs. Rush. . . ." So John Adams wrote to his wife, August 21, describing the pictures he had seen at Peale's painting room on the day before.[4]

Four months later, all of Peale's canvases were rolled up and sent into hiding with his family, while he marched with the militia to join Washington's army on the Delaware. The paintings were refugees again in the winter of 1777–1778. Then followed the painter's stormy political career, that brought him to poverty and nervous breakdown. His horizon did not brighten until, with the surrender of Cornwallis in October, 1781, America was suddenly swept by the realization that her long and tedious war was nearly won.

There followed a renaissance of a characteristic sort in Peale's art. He set about enlarging his usual painting-room exhibition into a gallery of portraits of the founders of the new nation, and in the summer of 1782 built for it the first skylighted gallery seen in America. He published a list of this "Collection of celebrated Personages" in the *Freeman's Journal*, October 13, 1784, Dr. Franklin included in the company.

It was in 1784 that Peale determined to add to his gallery exhibition a museum of natural history and to charge a small admission fee for its support—that project which was to absorb most of his energy through later years, and to bring him at last a full measure of prosperity. Before embarking wholly on this idea, he made one final effort to recapture success in art, with his exhibition of "moving pictures," an arrangement of lighted transparencies which he expected would revolutionize the art of painting. This venture was in full swing when, on September 14, 1785, Franklin returned from his long sojourn of ten years in France, and it is most probable that the Doctor, with his lively interest in all new developments, witnessed the performance.

It was certainly very soon after Franklin's return that Peale painted a life portrait of him in the standard size and manner he had adopted for his gallery—a bust, 24 by 20 inches, framed in a gilded oval mat. The old portrait, which had been so long in his exhibitions he presented to the American Philosophical Society on December 16. The life portrait may therefore be dated within the three months after Franklin's return. So, for the first time, the portrait of which we have only such illusive glimpses in preceding years, comes to light with its presentation to the Society. Peale's formal note to the Secretary, dated December 16, 1785, was read at the meeting of that date.

> As I have always considered the *American Philosophical Society* in the most respectable point of view; and as it is natural for every one to express his Sensibility in that manner which accords best with his own Habits & Line of business, I do myself the Honor to present to the said Society, through your hands, a Portrait of their Venerable President, his Excellency Dr. Franklin, copied from a much admired Painting of Mr. Martin.

To this the Society returned its thanks, requesting the painter to retain the picture "till the Society shall have a convenient place for its reception." Philosophical Hall was not yet built, and the portrait was to remain in Peale's possession for five or six years longer. The Society, meanwhile, encouraged the new museum enterprise with gifts, with guidance, recognizing a kinship to its own purposes and so setting a standard which Peale endeavored to maintain through the years. Franklin sent the painter the body of his French angora cat, probably in the winter of 1785–1786, for Peale had not yet developed his technique of taxidermy and failed to preserve the animal. By spring, he was giving all his attention to the museum, which soon filled the gallery floor and transformed the "moving picture" wing into a "Marine Room." The Society recognized his dedication to the new project by electing him to membership, July 21, 1786.

The gallery continued to be an essential part of the enterprise, and when the Constitutional Convention promised to enliven the Philadelphia scene once more with a throng of well-to-do strangers, Peale planned to offer for sale a series of prints from the pictures.

> Of late, [he wrote to Dr. David Ramsay, February 2, 1787,] I have begun another great work, the mak-

[4] *Familiar letters of John Adams to his wife . . .*, Charles Francis Adams, ed., 216, N. Y., 1876.

ing of mezzotinto prints from my collection of portraits of illustrious personages. This undertaking will cost me much labor, as I am obliged to take the plates from the rough and doing the whole business myself, even the impressing. I have just finished one of Dr. Franklin, which I am giving out as a specimen of the size and manner I intend this series of prints.

On February 27, he wrote to Washington, thanking him for the gift of a pair of golden pheasants to the museum (these successfully preserved and now in the collection of Harvard University), telling of his project and promising a print as soon as he could have it framed. His draft of the letter is full of erasures and corrections—tact was required since he wished to include a new likeness of Washington in the series. The Franklin would be, he wrote, "a specimen of the size and manner of my intended series of prints, yet I do myself an injustice as this print is much coarser than the others will be."

On March 30, he announced his series in the *Pennsylvania Packet,* at the same time giving his

FOR SALE

A New Print in Mezzotinto,

Taken from the Original Portrait of his excellency BENJAMIN FRANKLIN, L. L. D, E. R. S.

THIS print is offered to the public as a ſpecimen of the ſize and manner of a ſeries of prints, which the ſubſcriber (if he finds ſufficient encouragement) means to execute from his collection of portraits of illuſtrious perſonages. Subſcriptions are now ſolicited for a print of that diſtinguiſhed friend to America, the Marquis de la Fayette, which will be ready for delivery early in next month.

The advantage that ſubſcribers will have (beſides giving ſupport to an arduous undertaking) will be the certainty of getting the firſt impreſſions.

The ſubſcriber does not intend to take off any proof* prints more than is neceſſary to compleat each plate, then the names titles, &c. will be engraved, and the firſt impreſſions given to the ſubſcribers according to the dates of their ſubſcribing.

The price of the above print compleatly framed in a double oval frame, the inner frame gilt, is two dollars, or one dollar for the print. A proper allowance will be made to thoſe who purchaſe by the quantity to ſell again.

C. W. PEALE

Corner of Third and Lombard ſtreets

* In London it is a common practice to take off a conſiderable number of proofs, which are ſold for double the price that is put on the print after the letters are engraved, of ſuch eſtimation with connoiſeurs are the firſt impreſſions, and in mezzotinto prints the differences are moſt diſtinguiſhable, as thoſe plates are ſoon worn out. March 27. 3tawtf.

FIG. 1. Announcement of the Franklin mezzotint. Reprint from the *Pennsylvania Packet,* March 30, 1787.

Philadelphia public some hints on the subject of print collecting. There is only one note in his diary relating to the Franklin print. On August 6, 1788, some impressions, probably the last, were made. Only about five are now extant, and the Society is fortunate indeed in owning one of these.

The Franklin, the first of the series of mezzotints, is inscribed, *"pinx. et fecit 1787"* and this has led to the dating of the portrait in the same year. Peale's intention, however, was a publication of his gallery, not necessarily from new likenesses, and that date must be applied to the print only. The second of the series, Lafayette, *"Painted & Engraved by C. W. Peale, 1787,"* is from the gallery portrait of 1781.

The mezzotint series having failed to yield a profit, and the museum not yet self-supporting, Peale for the next few years maintained himself by painting trips to Maryland. He was well known in that country, and the competitors who had poured into Philadelphia after the war were less frequently seen. In 1788 the citizens of Annapolis consulted him, as a member of the Philosophical Society, on the subject of lightning rods for the State House and other buildings. Returning to Philadelphia, he called on Dr. Franklin to confer with him on this matter, on July 14, accompanied by his brother, James. Franklin was ill and could not see them, and, after lingering to admire the busts of Washington and John Paul Jones, the two sought instead the advice of David Rittenhouse.

Franklin's health had failed perceptibly in this year, and a twelvemonth later found him often in great suffering. At a meeting of the Society, July 17, 1789, David Rittenhouse and Dr. John Jones reported "a particular account of the effects of a flash of lightning, June 7, with drawings." Dr. Jones was the physician in attendance on Franklin, and it is certain that the tragic illness and the approaching close of this great life must have been discussed. The new Philosophical Hall was nearly ready for occupancy, and it was obviously appropriate that a portrait of Franklin should be obtained while yet there was time to hang upon its walls. Peale was absent, and no one now remembered his gift of 1785. The members

Resolved, That a portrait of Dr. Franklin, the president of the Society, shall, as speedily as is convenient, be executed, in the best manner,—to be perpetually kept in one of their apartments; and that Dr. Jones & Mr. Rittenhouse shall apply to Mr. Peale to prepare and execute the same.

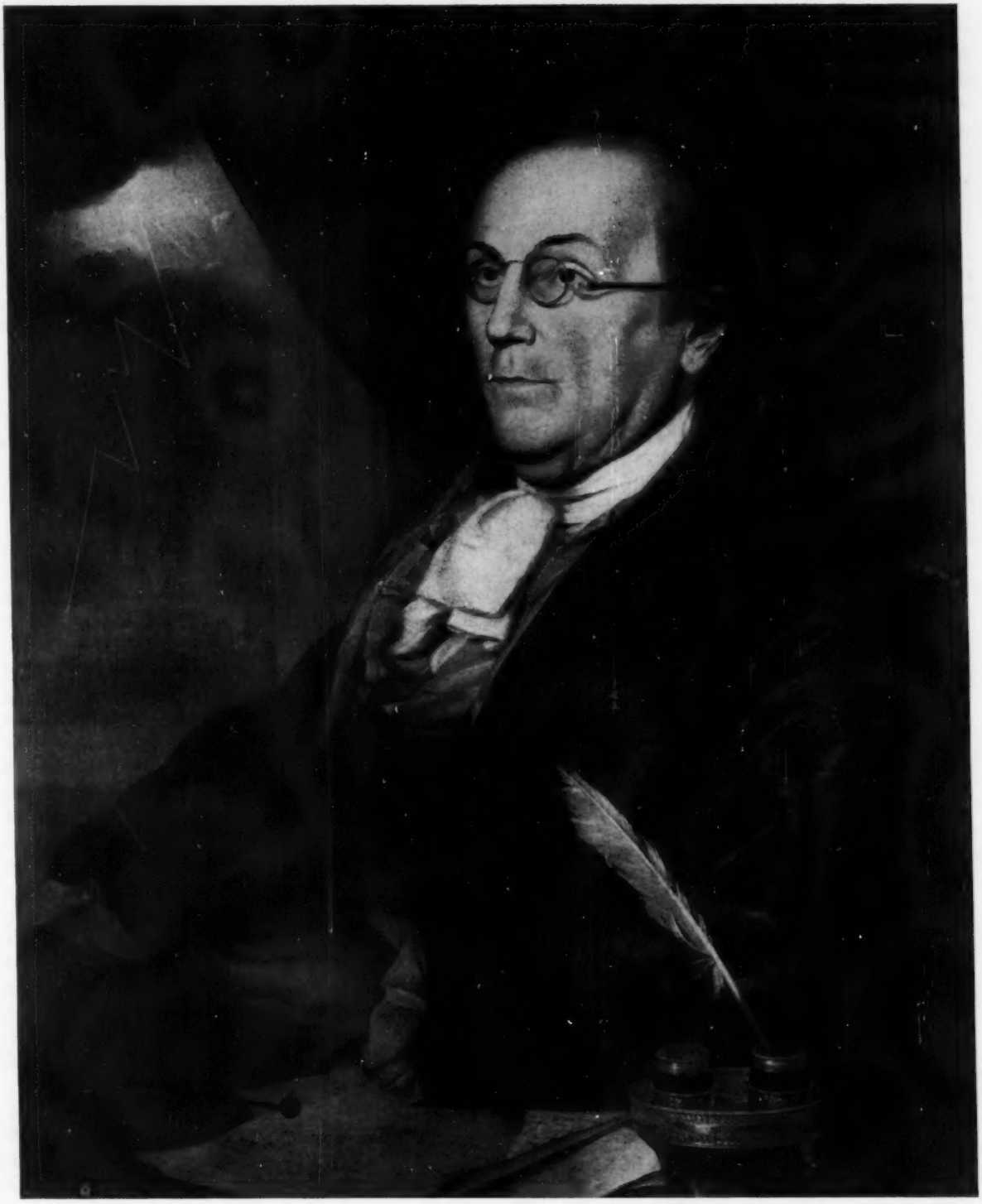


FIG. 2. Benjamin Franklin. The portrait commissioned by the Society, July 17, 1789. Now owned by the Historical Society of Pennsylvania.

Peale had just returned from Baltimore, bringing back about sixty new birds, and had been busy mounting them, putting all the exhibits in order, washing both "birds and beasts" in a preservative of arsenic solution.

I was ready to return to Maryland, [he noted in his diary,] but the Philosophical determined to have a portrait of Dr. Franklin painted. Mr. Rittenhouse and Dr. Jones was appointed to apply to the Doctor to set for my taking the likeness. On my waiting on the Doctor I found him confined to his bed, and he requested [me] to copy my portrait of him and that he would try to give me an opportunity to finish it by his setting again. Finding that I should be detained with this picture, I acquainted Mr. [Jonathan Dickinson] Sergeant that I would now paint the portrait of his Lady which he had some time past spoke to me for. I finished this portrait, and got the Doctor to set, but his pain was so great that he could only sit ¼ hour, and was ill, from the pressure of the stone, for 24 hours after. This being his situation, I am compelled to decline giving the Doctor further trouble.

He left for Baltimore on July 30.

At his first visit, therefore, Peale was asked to come back with a copy of his Museum gallery portrait, and to give this the final touches from life. Upon doing so, however, he had only fifteen minutes for his purpose, so that the new canvas was essentially a copy of the old—the hair perhaps a little thinner and more gray, but with no other perceptible difference in the features. Rembrandt Peale, then aged eleven, accompanied his father on this second visit, and loved in later years to recount his thoroughly garbled version of it. Rembrandt Peale also wrote a letter dated June 10, 1859, to Joseph Harrison, purchaser of the small gallery portrait at its sale in 1854, testifying with his usual bland inaccuracy that this was the last portrait of Franklin, and dating the final sitting in 1790, ten days before Franklin's death.

The new picture was actually in half length, and it now remained for Peale to fill in its detail and accessories. He intended the piece to celebrate Franklin's discovery of the lightning rod. The result is comparable to the Mason Chamberlin engraving, which has the same general purpose and pose. Franklin is seated at a table, a thunder storm raging without the window, and lightning, striking one of a group of brick buildings, dramatically illumines its upper windows. The Doctor, however, gazes placidly in another direction, toying with a lightning rod in one hand while another lies on the table before him. On the table also is a large page of manuscript, upon which the painter has carefully copied in longhand an excerpt from Franklin's *Experiments and Observations on Electricity* of 1769.[5] He has chosen the passage cleverly, and with his fine sense for the dramatic breaks it off abruptly at the culminating words.

In every stroke of lightning, I am of opinion that the stream of electric fluid, moving to restore the equilibrium between the cloud and the earth, does always previously find its passage, and mark out, as I may say, its own course, taking in its way all the conductors it can find, such as metals, damp walls, moist wood, &c., and will go considerably out of a direct course, for the sake of the assistance of good conductors; and that, in this course, it is actually moving, tho' silently and imperceptibly, before the explosion, in and among the conductors; which explosion happens only when the conductors cannot discharge it as fast as they receive it, by reason of their being incompleat, disunited, too small, or not of the best materials for conducting. Metalline rods, therefore,

This picture, commissioned by the Society, never came into its possession. Of its history we know nothing until 1852, sixty-three years later, when it emerges, most fortunately, as the gift of James Joseph Barclay to the Historical Society of Pennsylvania. Barclay, lawyer and philanthropist, had been born in 1794, living a long and useful life in his native city. It may have been his father, John Barclay (1767–1816), elected Mayor of Philadelphia in 1791, who had purchased the portrait from the artist.

The Philosophical Society's failure to purchase the painting would obviously seem to have followed the realization that it already owned the copy from Martin which Peale had been holding for it since 1785. That portrait is the more characteristic likeness, and the more appropriate for Philosophical Hall. To the new one the objection might have been made that it was not, as intended, a life portrait. There might even also have been unfavorable comment on Peale's lightning, the conventional lines and angles familiar in art but unknown in nature.

His hurried departure from Philadelphia, July 30, 1789, probably left Peale's last portrait still unfinished. He was back in Philadelphia at the time of Franklin's death, and there is a possibility that Rembrandt Peale was correct in dating a last attempt to obtain a sitting ten days before that event, April 7, 1790. But most of Peale's time

[5] Smyth, Albert Henry, ed., *Writings of Benjamin Franklin* 3: 159–160, N. Y., Macmillan, 1905.

was spent away from home, and he did not settle down again in Philadelphia until August, 1791, after his second marriage and return from a wedding trip in Maryland. Philosophical Hall had been completed, and we find the painter a regular attendant at the meetings thereafter. He was present on December 2, when a portrait of the new President, David Rittenhouse, was ordered, together with a frame for that of Franklin.

Resolved, that Dr. Rittenhouse be requested to sit for his Portrait, and the same be painted by Mr. Peale, at the expense of the Society, to be placed in their Hall.

Resolved, that the Portrait of Dr. Franklin, presented some time ago by Mr. Peale, shall be framed in the best manner that the work can be executed for a price not exceeding Six Pounds.

The rejected portrait of Franklin shows him wearing a blue brocade dressing gown, lined with pale pink silk. Curiously, the new portrait of Rittenhouse shows him in precisely the same attire, as if, perhaps, the members had praised the coloring and informality of the one, and had asked that it be repeated in the other.

Curiously also, Peale came afterward into possession of the Martin replica from which he had copied the Society's portrait. Franklin had bequeathed this canvas to the Supreme Executive Council of Pennsylvania, "if they shall be pleased to do me the honor of accepting it and placing it in their Chamber." The Council, by a resolution of May 14, 1790, had accepted the bequest. In that autumn, however, a new constitution was adopted for the state, by which the Supreme Executive Council passed out of existence.

The picture seems to have remained at Independence Hall till the state government removed to Lancaster in April, 1799, and to have been still there when Peale's Museum moved in in the fall of 1802. Jonathan Williams, who had married a niece of Robert Alexander and who had come to Philadelphia in 1785 with the Martin original, left a memorandum of its history on the back of his picture,[6] dated January 6, 1808. To this he added a note telling how Franklin's replica "became an abandoned orphan without having any place in which to hang itself. The celebrated Peale, a declared enemy to everything unnatural, took pity on the wretched outcast, and has humanely hung it up among the natural curiosities in his Philadelphia Museum."

It was listed in the catalogue of the Museum pictures published in 1813, with a note that it was the property of the state. Arrangements were made to send it to Lancaster, but were for some reason never carried out, and it was eventually sold with the rest of the gallery in 1854. In 1912, it found a final and appropriate haven in the great collection of the Pennsylvania Academy of the Fine Arts.

[6] Now owned by Mrs. R. Barclay Scull, Haverford, Pa.

SUMMARY

1. Three-quarter length, size 49½ × 39 inches. Copy from Franklin's replica of the portrait by David Martin, 1767. Probably painted by Charles Willson and James Peale, Philadelphia, July, 1772. Owned by the American Philosophical Society.

2. Bust, size 23 × 18¾ inches. Life portrait by Charles Willson Peale, painted between September 14 and December 16, 1785, for the artist's portrait gallery. The subject is shown facing to the left, the skin tones soft, with pink on the cheeks, brownish-gray hair, gray eyes behind silver-rimmed spectacles, the coat and vest of a medium brown with a reddish tinge. The background is a warm gray, unfinished at the corners in anticipation of an oval mat. Owned by the Pennsylvania Academy of the Fine Arts.

3. Mezzotint, size 6 × 5 inches. By Charles Willson Peale, January, 1787. Based on the gallery portrait. Within oval border, bearing the title and inscription, *"HIS EXCELLENCY,* B. FRANKLIN L.L.D. F.R.S. *PRESIDENT OF PENNSYLVANIA & LATE MINISTER OF THE UNITED STATES OF AMERICA AT THE COURT OF* FRANCE," and *"C. W. Peale pinxt. et Fecit 1787."* Impressions are owned by the American Philosophical Society and the Metropolitan Museum of Art.

4. Half length, size 36 × 27 inches. By Charles Willson Peale, the head, a replica of the gallery portrait. Painted in July, 1789, the background and accessories probably added later. Owned by the Historical Society of Pennsylvania.

DE LESSEPS ON PANAMA, NICARAGUA, AND TEHUANTEPEC

H. CARRINGTON LANCASTER

Professor of French Literature, Johns Hopkins University

THE letter reproduced below was dictated and signed by Ferdinand de Lesseps, builder of the Suez Canal and president of the French company that undertook to construct the Panama Canal. It was written in reply to John L. Williams, father of John Skelton Williams, comptroller of the treasury in the Wilson administrations. John L. Williams was an intimate friend of my father, Robert A. Lancaster, also of Richmond. Both were deeply interested in the Nicaragua Canal, a fact that accounts for the correspondence with de Lesseps. As the letter was found among my father's papers, it must have been given to him by Mr. Williams, who may have written to de Lesseps at his request. It is presented to the American Philosophical Society by my father's heirs.

The clipping from the *New York Herald*, referred to as sent on April 7, is in all probability one that was published on April 5 (p. 8, col. 4), 1888. It reports the election of the officers of the Panama Railroad Co., an organization of which nearly all the stock had been acquired by de Lesseps's company. The resignation of J. G. McCullough had been announced by the *Herald* on March 28 and April 2. It had published on April 3 the names of the directors, most of them new. They met next day to elect as president John Newton, Commissioner of Public Works, and other officers. Mr. Williams must have known that de Lesseps, who was responsible for the selection of the directors, knew what action they would take, but the sending of the clipping gave him an opportunity to ascertain from de Lesseps himself what he hoped to do at Panama and what he thought of two other ways across the continent.

One of these had been proposed by James Buchanan Eads (1825–1887),[1] who had built a bridge across the Mississippi at Saint Louis and had given the river an additional exit into the Gulf of Mexico. He had argued before Congress against de Lesseps's claims for the Panama Canal and had offered instead to build a quadruple-track ship-railway across the Isthmus of Tehuantepec. On this railway ocean-going vessels were to be dragged by locomotives across the isthmus, from the Gulf to the Pacific and back. It is not surprising that de Lesseps referred to his system as unpractical.

What the letter says about the Nicaragua Canal is of special interest in showing that de Lesseps did not fear competition from this project. His liberal attitude may be due to the fact that he thought the Nicaragua Canal would be of only local importance, but in any case it contrasts favorably with the position of those whose interest in Pacific railroads caused them to oppose the construction of any canal that would connect the two oceans.

De Lesseps called the lock canal provisional because he hoped eventually to have a sea-level canal. His estimate that it would be carrying seven and a half million tons by 1890 is quite pathetic, in view of the fact that his company was to fail within less than a year after this letter was written.

Paris, le 28 Avril 1888.

Compagnie universelle
du
Canal Interocéanique
46, Rue Caumartin
No 113240
Les lettres doivent être
adressées à M. le Président-Directeur
de la Compagnie
Adresse télégraphique
Lesseps-Paris
Objet de la Lettre:
Remerciements
et
Renseignements

Messieurs,

J'ai reçu la lettre que vous m'avez fait l'honneur de m'écrire le 7 courant.

Je vous remercie de m'avoir communiqué la note du "New York Herald" que je connaissais déjà et qui est absolument exacte.

Je compte que le canal provisoire à écluses sera ouvert à la grande navigation dans le courant de 1890.

Toutes les questions relatives au Chagres ont été résolues par les ingénieurs de la Compagnie de façon à ce que le transit ne soit pas interrompu en aucune saison.

[1] *Cf.* Dorsey, Florence L., *The story of James B. Eads*, N. Y., Rinehart, 1947.

Pour que vous puissiez étudier la question d'une façon plus exacte, je vous fais adresser mon rapport à l'Assemblée Générale des Actionnaires qui a eu lieu le 1er Mars, la carte avec indication de l'emplacement des écluses et la note technique publiée par les ingénieurs de la Compagnie. Vous y trouverez tous les renseignements que vous me demandez.

Dès l'ouverture du Canal nous estimons le trafic minimum à 7 millions ½ de tonnes.

Je n'estime pas pratique le système du Capitaine Eads; quant au percement d'un canal à travers le Nicaragua, la question a été étudiée avec soin par la commission internationale qui fut chargée d'examiner la possibilité du percement de l'Isthme américain et resolue d'une façon favorable à Panama.

En supposant même que le Canal du Nicaragua soit mis à exécution concurremment à celui de Panama, ce ne pourrait jamais être qu'une voie de communication intérieure et une telle entreprise loin de nuire à notre œuvre servirait au contraire nos intérêts en donnant au commerce un développement jusqu'alors inconnu dans cette partie du monde.

Veuillez agréer, Messieurs, l'assurance de ma considération très distinguée.

Le Président-Directeur
Ferd. de Lesseps

Messieurs John L. Williams and son,
Bankers and Brokers,
N° 111 Main Street à Richmond.

"A CLOCK SENT THITHER BY THE ROYAL SOCIETY" [1]

THOMAS D. COPE

Professor of Physics, University of Pennsylvania

IMMEDIATELY after their return to London from America in the autumn of 1768 Mason and Dixon presented reports to the Royal Society summarizing the outcomes of projects that they had undertaken for the Society while in America. These appear in *Philosophical Transactions* for the year 1768 in articles entitled:

Art. XLI Introduction to the following Observations, made by Messieurs Charles Mason and Jeremiah Dixon for determining the Length of a Degree of Latitude in the Provinces of Maryland and Pennsylvania, in North America; by the Reverend Nevil Maskelyne, B.D. F.R.S. Astronomer Royal.[2]

Art. XLII Observations for determining the Length of a Degree of Latitude in the Provinces of Maryland and Pennsylvania, by Messieurs Charles Mason and Jeremiah Dixon.

Art. XLIII Astronomical Observations, made in the Forks of the River Brandiwine in Pennsylvania, for determining the going of a Clock sent thither by the Royal Society, in order to find the Difference of Gravity between the Royal Observatory at Greenwich, and the Place where the Clock was set up in Pennsylvania; to which are added, an Observation of the End of an Eclipse of the Moon, and some Immersions of Jupiter's First Satellite observed at the same Place in Pennsylvania: by Charles Mason and Jeremiah Dixon.

Bits of evidence in these reports and in many others and in manuscripts have led to the conclusion that the clock which was sent by the Royal Society to Mason and Dixon in Pennsylvania was John Shelton's Astronomical Regulator which is still owned by the Society and today is keeping almost faultless time in Burlington House, London. The clock is described in detail by Mr. H. Alan Lloyd (see below, pp. 268–271). The evidence of its identity with the clock sent to Mason and Dixon is marshalled in this paper and the travels of the clock are followed during the first ten years of its existence.

XLIII. *Aſtronomical Obſervations, made in the Forks of the River* Brandiwine *in* Pennſylvania, *for determining the going of a Clock ſent thither by the* Royal Society, *in order to find the Difference of Gravity between the Royal Obſervatory at* Greenwich, *and the Place where the Clock was ſet up in* Pennſylvania; *to which are added, an Obſervation of the End of an Eclipſe of the Moon, and ſome Immerſions of* Jupiter's *Firſt Satellite obſerved at the ſame Place in* Pennſylvania: *By* Charles Maſon *and* Jeremiah Dixon.

Read December 15, 1768.

The Place where theſe Obſervations were made is the Northernmoſt Point of the Lines that were meaſured for a Degree of Latitude, or Point N. (ſee TAB. XIII. fig. 2.) relative to that Meaſure; it lies 31 Miles Weſt, by Meaſurement; and 10",5 South of the Southernmoſt Point of the City of Philadelphia, as found by the Sector.

FIG. 1.

In the report on the "going of the clock in the Forks of the Brandiwine" one sentence alone aids in identifying it. It reads:

> The pendulum was adjusted to the upper scratch, with No. 3 at the Index, as directed by the Rev. Mr. Maskelyne, Astronomer Royal: but the spring at the suspension of the pendulum having been broke, (when the ship, in which it was sent, was wrecked on the Jersey coast) we cannot be certain that the pendulum is now of the same length as it was when sent from London.

For further clues one turns to Charles Mason's *Journal* and to *Minutes* of *Councils* of the Royal Society.[3]

In recent issues of this *Bulletin* [4] it has been told that Mason and Dixon, by letters written in Amer-

[1] Research was carried out with the aid of grants from the Penrose Fund of the American Philosophical Society. Copies of sources in England were secured by H. W. Robinson, lately Librarian of the Royal Society. Possessions of the Royal Society have been photographed by permission of President and Council.

[2] The Astronomers Royal, and their periods of service, mentioned in this article are the Rev. James Bradley, 1742–1762, the Rev. Nathaniel Bliss, 1762–1764, the Rev. Nevil Maskelyne, 1765–1811.

[3] Charles Mason's *Daily Journal* (1763–1768); National Archives, Washington, D. C.; photographic copy in Library of the American Philosophical Society. *Minutes* of *Councils* of the Royal Society (1760–1768); photographic copy made by permission of the President and Council deposited in Library of the American Philosophical Society.

[4] *Proc. Amer. Philos. Soc.* **92** (2), 1948, and **93** (2), 1949.

FIG. 2. Point N marks the observatory on Harlan's farm in "the Forks of the River Brandiwine" in Chester County, Pennsylvania. Here the clock was used by Mason and Dixon.

ica to Astronomer Royal Maskelyne and to John Bird, had asked the Royal Society to sponsor the measurements of a degree of longitude and of a degree of latitude in Maryland and Pennsylvania. In his reply to them dated Greenwich, November 8, 1765, Maskelyne announced the decision of the Society to sponsor the measurement of a degree of latitude. Near the end of his letter Maskelyne says:

> As I do not find that you have a clock with you I shall make a proposal to the Council of the Royal Society, that their clock, which I took to St. Helena and Barbados, may be sent to you, with the help of which joined to your transit Instrument you may determine the bearings of your Signals many different ways, and make any other Astronomical Observations. Always fix the Clock up firm and adjust the pendulum to the same Length, and it will always keep the same rate of going very nearly. . . .
>
> Should this Clock be sent to you, adjust the Pendulum to the Upper Scratch no 3 standing against the Index, which answered to sidereal time at St. Helena, and keep the clock going in the same place for some days, in order to determine its rate of going.
>
> Note the height of the Thermometer at the time. This Experiment will show the force of Gravity, where you set it up, compared with the force of Gravity here, at St. Helena, the Cape of Good Hope, and Barbados. Endeavor to estimate your Elevation above and distance from the Sea where you set the Clock up, also note the Latitude of the place.[5]

Mason and Dixon set up the Royal Society's clock at their observing station on John Harlan's farm in the Forks of Brandywine, Chester County, Pennsylvania.[6] In his *Journal* Mason writes:

> 1766 Dec. 11 The Sector set up at Mr. Harlands. . . . Here we also set up the Clock sent us by the Royal Society of London: and also the Proprietors Clock. . . .
>
> 1766 Dec. 15. This day we set the Pendulum of the Royal Society's Clock to the upper Scratch with Number 3 at the Index; as desired by Mr. Maskelyne.

From these records one may conclude that the clock of the Royal Society which Maskelyne had used on St. Helena and on Barbados arrived as planned for the use of Mason and Dixon in Pennsylvania.

Through the winter of 1766–1767 and the spring following mentions of the clocks appear regularly in Mason's *Journal*. On December 16 the Proprietors' clock was cleaned at Harlan's Farm by its maker, Mr. Jackson. This clock stopped when temperatures became low. It was an eight-day clock and was wound weekly. The Royal Society's clock was set up on December 11. It was

> fixed to a piece of timber sawed on all sides forming an oblong square 22 inches in breadth and 5¼ inches thick. The said piece of timber was set four feet into the ground which was composed of a very firm, dry, hard clay.

Its pendulum was adjusted on December 15. The clock was wound on December 28, and was not wound again until January 24.

The amplitude of the pendulum's swing was regularly 1° 40′ to either side. This decreased when temperatures sank low, and the rest point shifted a little. Mason attributed the shift to a

[5] Charles Mason's *Daily Journal*. *Minutes* of *Councils* of the Royal Society.

[6] The Stargazers' Stone, *Penna. Hist.* **6** (4), 1939; Charles Mason and Jeremiah Dixon, *Sci. Monthly* **62** (6), 1946.

settling of the timber to which the case was bolted. The clock lost time at a quite regular rate of 15.8 seconds per day against the stars from December 24 until February 25. The clock was taken down and packed in its case on February 28. Later in 1767 Mason records

> May 24, Received . . . Letter from Mr. Maskelyne (with an Ephemeris for 1767) on which I sent the clock, belonging to the Royal Society by four men to be carry'd to Wilmington, and from thence by water (one of the men with it) to Philadelphia.
> May 28, The clock safely landed at Philadelphia.
> June 2, Wrote to Mr. Maskelyne and Dr. Morton with an account of the clock's going etc., etc.

Maskelyne's letter just referred to had been written at Greenwich on February 24, 1767. The item in it that had caused Mason to act reads:

> The Council of the Royal Society have ordered that you should send the clock home immediately, as we hear it has received great damage & must be put in order directly for the ensuing transit of Venus over the Sun.

In his letter to Mason and Dixon of November 8, 1765, Maskelyne described the clock that he was planning to send to them as "their clock which I took to St. Helena and Barbados." This clock had been described by Maskelyne in an article published in *Philosophical Transactions* for 1762, vol. LII Part II, under the title "LXVI Observations on a Clock of Mr. John Shelton, made at St. Helena: In a letter to the Right Honourable Lord Charles Cavendish, Vice-President of the Royal Society, from the Reverend Nevil Maskelyne M.A.F.R.S." The letter was dated St. Helena, July 30, 1761. In the course of it Maskelyne discussed the problem of the figure of the Earth. The Ancients had known the Earth to be round. In the seventeenth century Christian Huygens had seen clearly that because of the rotation of the Earth an object on its surface must weigh less at the equator than at the poles. And during the same era Richer had shown that a pendulum clock regulated in France ran slow on the island of Cayenne. And Isaac Newton had shown

> how the variation of gravity in different latitudes depended not only upon the centrifugal force, but also upon the figure of the earth, which he likewise determined, as well as the proportion of the force of gravity in different latitudes as far as theory alone could limit them.

"The proportion of the force of gravity in different latitudes" and the "proportion of the equatorial to the polar diameter of the earth" had been found by setting up well made, carefully adjusted clocks in London and in Jamaica, in Paris and on the polar circle and in many other places. "I could not fail" wrote Maskelyne,

> of being desirous of improving the opportunity, which my voyage to St. Helena afforded, of examining this curious point. . . .
> The Royal Society, to whom I communicated my intention, . . . were pleased to furnish me with an excellent clock, with a gridiron-pendulum adapted to it, executed by that diligent and ingenious artist Mr. John Shelton.
> Dr. Bradley was pleased to take upon him the trouble of setting the clock up at the Royal Observatory at Greenwich, and there to examine its going, where he informed me, that it lost 11 seconds per day, upon sidereal time, the thermometer . . . withinside of the clock-case, standing about 50 degrees. . . .

The Shelton clock had been built for long voyages by land and sea. The case was heavy and strong. Maskelyne describes the clamps provided to attach the pendulum rigidly to the back of the case for carriage. Mr. Lloyd has found evidence of all of them in the Shelton clock now in Burlington House. Maskelyne continues:

> to adjust the pendulum to the same exact length, as it was of at Greenwich, a mark had been made on the rod, where the top of the bob of the pendulum rose to; and Dr. Bradley informed me of the number, which stood against the index, on the nut at the bottom of the pendulum, by screwing or unscrewing of which the bob is elevated or depressed.

An inspection of the photographs of the pendulum published by Mr. Lloyd (p. 270) will reveal the marks on the rod, the nut at the bottom, the numbers on the nut, and the index that points to them.

The Shelton clock mounted and adjusted on St. Helena, wrote Maskelyne, "loses upon the stars, in one revolution $1^m\ 57\ 1/5^s$; . . ." "The same clock at Greenwich, with the pendulum adjusted to the same length, lost 11^s upon the stars, in a sidereal day. "Therefore," continued Maskelyne, "the force of gravity at Greenwich is to the force of gravity at St. Helena . . . as 10000 000: 9975405.

> The extent of the vibrations of the pendulum here, as well as in England, is exactly 1° 45′ on each side of the perpendicular, according to the divided arch, which is at the bottom of the pendulum.

Minutes of Councils of the Royal Society make frequent mention of the clock. During the sum-

mer of 1760 the Society was preparing to send expeditions to St. Helena and to Sumatra to observe the transit of Venus which was due to occur on June 5, 1761. Rev. Nevil Maskelyne, with Robert Waddington as assistant, was chosen to go to St. Helena. Charles Mason, with Jeremiah Dixon as assistant, was selected to observe in Sumatra. Among the instruments needed, clocks were listed by the Astronomer Royal the Rev. James Bradley. On July 3, 1760, Maskelyne requested a clock with a pendulum compensated for temperature, to cost about 20 pounds sterling. On September 11, 1760, a time-piece at 20 guineas was ordered from Mr. John Ellicott. On November 13, 1760, Mr. Ellicott reported his clock ready for delivery to Portsmouth and a man ready to accompany it to supervise, and to instruct Mr. Mason in assembling the clock. And on December 27, 1760, Maskelyne and Waddington signed a receipt for "a clock with a gridiron-pendulum" while Mason and Dixon signed for "a clock made by Mr. Ellicott." On December 23, 1760, Mr. Shelton was paid £34:16:6.

These clocks were used in observing on St. Helena and at the Cape of Good Hope and were brought back to London in the spring of 1762. On May 13, and 27 of that year James Short F.R.S., acting for the Royal Society, received at his house in Surrey Street the instruments brought back from the Cape of Good Hope by Mason and

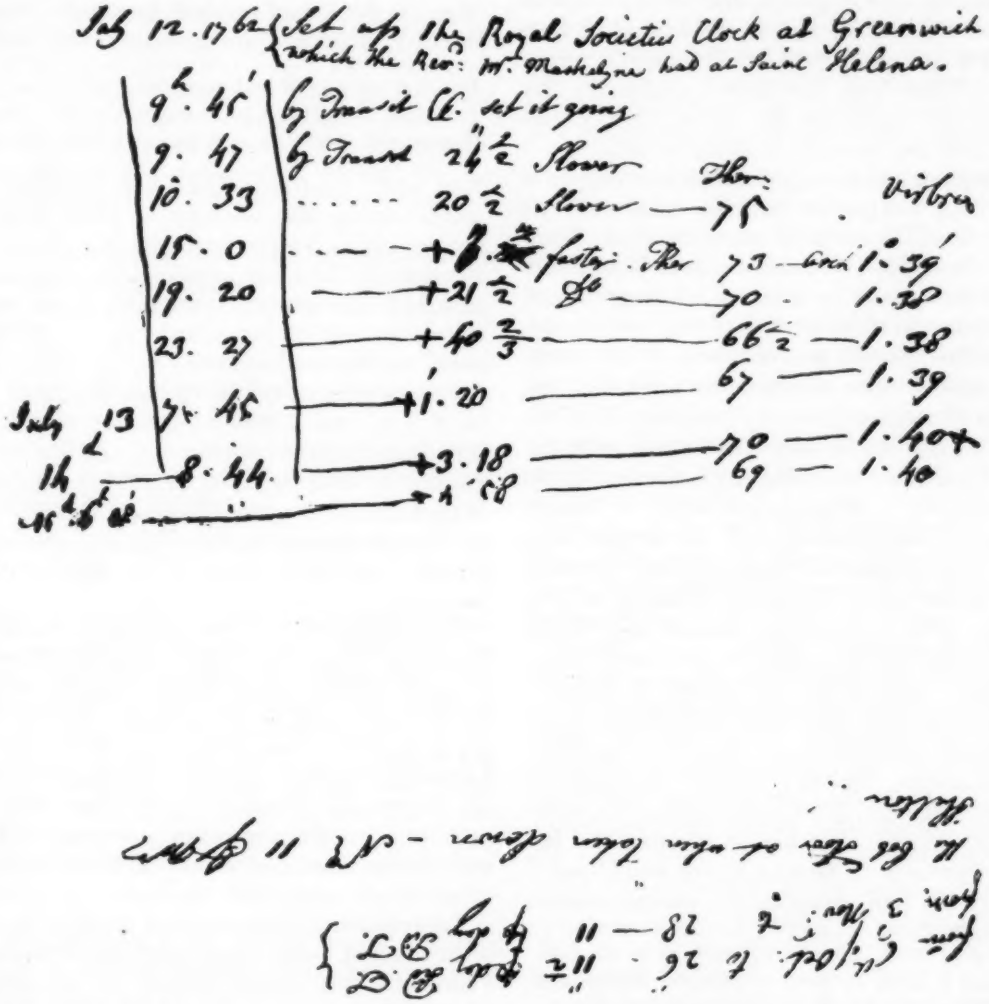


FIG. 3. The Shelton Clock was used at Greenwich Observatory during the summer of 1762. The handwriting has been identified as Charles Mason's. From Maskelyne MSS Class A, No. 368, copied by permission of the Astronomer Royal.

Dixon and gave his receipt. On June 17, 1762, Maskelyne was directed to deliver the clock, brought back from St. Helena, to Greenwich Observatory. And on August 18, 1762, Rev. Nathaniel Bliss, Astronomer Royal succeeding Dr. James Bradley, signed a receipt for a "month clock with a compound pendulum made by Mr. Shelton" property of the Royal Society, kept at Greenwich Observatory.

In 1763 the Commissioners of Longitude were sending expeditions to the Barbados to test the time-keeping qualities of John Harrison's chronometer at sea. This famous time piece was then at a critical stage in its development.[7] *Minutes* of *Councils* of the Royal Society record that on August 18, 1763, John Shelton's clock was borrowed by the Board of Longitude and by Rev. Nevil Maskelyne F.R.S., for use in the Island of Barbados while testing Mr. John Harrison's watch. By letter Maskelyne had asked specifically for Shelton's clock made for the Royal Society, two alarums, and the Society's dipping needle.

In their letter, proposing to measure a degree of longitude and a degree of latitude, written to Astronomer Royal Maskelyne from Newark, Delaware, on June 20, 1765, Mason and Dixon said "The Winter Season here, is subject to great and sudden Changes of Heat and Cold, and consequently will require the best of Clocks." The entire letter is spread upon *Minutes* of *Councils,* and during the discussion of it on November 14, 1765, the Astronomer Royal said "the clock with the Gridiron Pendulum belonging to the Society would be most proper." Maskelyne's reply to Mason and Dixon of November 8, 1765, has already been quoted. It is included in Mason's *Daily Journal,* and it is spread upon *Minutes* of *Councils* of November 14, 1765. It advises Mason and Dixon that the Society had been asked to send them "their clock, which I took to St. Helena and Barbados." The clock along with other pieces and supplies was sent to Mason and Dixon on the good ship *Ellis,* Sam Richardson Egdon, Master. *Minutes* of *Councils* of August 8, 1766, record news of a "supposed wreck of the Ship Egdon wherein the Instruments were sent to Messrs. Mason and Dixon." On January 15, 1767, *Minutes* of *Councils* contain a resolution:

> Ordered that a letter be sent to Messrs. Mason and Dixon, reciting the former letters, and desiring the return of the clock which had been damaged without Delay.

On April 2, 1767, Dr. Morton, Secretary of the Royal Society, laid before the Council a letter from Mason and Dixon written from Philadelphia on January 6. It related that resolutions of the Society had been received, that the instruments were all safe except that the thin brass of the pendulum near its point of suspension was broken, that it had been repaired, and that the clock was going. A doubt remained as to whether the pendulum had its former length. Thereupon it was resolved "that the order for the return of the clock, mentioned at the last council, be superseded." Long before this resolution reached Mason and Dixon, the clock, which they had started homewards on May 24, 1767, had reached England. At a meeting of Council held on November 19, 1767

> The Astronomer Royal reported that he had received back the Society's Clock from Messrs. Mason and Dixon, and that it is now going at the Observatory.

And while Shelton's Clock was travelling homewards during the summer of 1767, Mason and Dixon, under escort from the Six Nations provided by Sir William Johnson, were extending the parallel of latitude that bears their names westward from the crest of the Alleghenies to its "farthest west" on Dunkard's Creek.[8]

It is of interest to record that Benjamin Franklin F.R.S., and at times a member of its Council, was present at the meeting of Council when it was decided to send the clock and other equipment to Mason and Dixon, that his advice was asked about its transportation to America, and that he was present also when news of its safe arrival was received.

The fortunes of John Shelton's clock in the hands of Nevil Maskelyne, Charles Mason, and Jeremiah Dixon in the South Atlantic from 1761 to 1764 are still to be related. Earlier in this paper a letter from Maskelyne to Lord Charles Cavendish has been quoted. It was written from St. Helena on June 30, 1761, less than three months after the expedition's arrival, and it reported important conclusions already drawn from observations made with the clock.

"Astronomical Observations made at the Island of St. Helena" were reported to the President and Fellows of the Royal Society by Maskelyne in

[7] Gould, R. T., *The marine chronometer, its history and development,* Chap. III and IV, London, Potter, 1923.

[8] Degrees along the West Line, the parallel between Maryland and Pennsylvania. *Proc. Amer. Philos. Soc.* **93** (2), 1949.

December 1764 and in January 1765. They are published in *Philosophical Transactions,* vol. 54. Shelton's clock is mentioned repeatedly. Mason and Dixon are mentioned in this report for they had joined Maskelyne on St. Helena on Oct. 16, 1761. They had observed the transit of Venus at the Cape of Good Hope instead of Bencoolen on the island of Sumatra, their original destination. Fortunes of war, wind, and weather had delayed their voyage and had compelled them to disembark at the Cape. There they used the clock which John Ellicott had built for their use at the request of the Royal Society.[9] In the course of his report from St. Helena Maskelyne says:

> October 28th (1761), I took down the clock (Shelton's), packed it up, and sent it on board a vessel going to the Cape of Good Hope, to return again soon, committing it to the care of Mr. Jeremiah Dixon, who had observed the transit of Venus over the sun at the Cape. He took his passage on board the said vessel, in order to set the clock up at the Cape of Good Hope, and examine the difference of its going between that place and St. Helena, for determining the proportion of the force of gravity at those two places.
>
> The same day Mr. Mason fixed his clock up, for my use, against a large massy post, let deep into the ground. . . . This clock was made by Mr. John Ellicott F.R.S.
>
> I still continued, for some time, to make my observations in the upper room as before. For this purpose I fixed up a little clock there. . . .
>
> The little clock as well as the larger clock, which I sent with Mr. Dixon to the Cape of Good Hope, was made by Mr. John Shelton.

Later in his report from St. Helena Maskelyne writes:

> The observations from February 3d 1762 were made with my own clock, with which Mr. Dixon returned from the Cape of Good Hope December 30th, 1761, after examining the going of it there. He found it to get there 36.6 seconds upon sidereal time in one revolution of the fixed stars, or 29.3 seconds per day more than it got at St. Helena with the same length of pendulum: but I propose to give a more particular account of these, and some other experiments then made by Mr. Dixon at the Cape, some other opportunity.

From observations made on the Sun at the meridian on St. Helena during January and February 1762 Maskelyne infers:

> Hence the clock appears to have got at the rate of 6.″3 upon sidereal time in 24 hours. . . .
> After the manner described[10] by Mr. Mason in his account of the going of Mr. Ellicott's clock determined by him and myself . . . the clock appeared to get 6″.25 upon sidereal time in one revolution of the stars which agrees exactly with the former determination. . . .

James Short F.R.S., had taken exception to Mason's report on the going of Ellicott's clock and to the reliability of relative values of gravity determined by clocks.[11] Maskelyne comments upon Mr. Short's objections:

> I readily allow that, if clocks are fixed up in a slight manner, . . . the experiments made with them cannot be depended upon. . . . but when they are fixed in a firmer manner, they may be depended upon near enough to be of a considerable use in physical enquiries: which I have reason to think from the many experiments I have tried with the Royal Society's clock, made by Mr. John Shelton, which I propose to give a particular account of at some other opportunity.

The reader should compare these comments made by Rev. Nevil Maskelyne in his report read to the Royal Society in December 1764 and January 1765 with the directions for setting up the clock in America that he sent to Mason and Dixon one year later. And he should also reread the records that Charles Mason entered in his *Journal* telling the precautions that he had taken when mounting the Shelton clock at Harlan's Farm in Chester County, Pennsylvania in December, 1766. The writer of this paper has sought for Maskelyne's proposed accounts of his many experiments with Shelton's clock and of the work that Jeremiah Dixon did with the clock at the Cape of Good Hope in the late autumn of 1761. He has failed to find them.

Earlier in this paper *Minutes* of *Councils* of the Royal Society for August 18, 1765, are quoted to the effect that Maskelyne borrowed the Shelton Clock for use on the Island of Barbados. His report to the Royal Society on "Astronomical Observations made at the Island of Barbados" is found in *Philosophical Transactions,* vol. 54, art. 59. The observations began on November 10, 1763, and continued until August 10, 1764. No

[9] The first scientific expedition of Charles Mason and Jeremiah Dixon. *Penna. Hist.* **12** (1), 1944.

[10] Observations for proving the Going of Mr. Ellicotts clock at St. Helena; by Charles Mason, *Phil. Trans.* **52** (2), art 86, 1762 (pub. London, 1763).

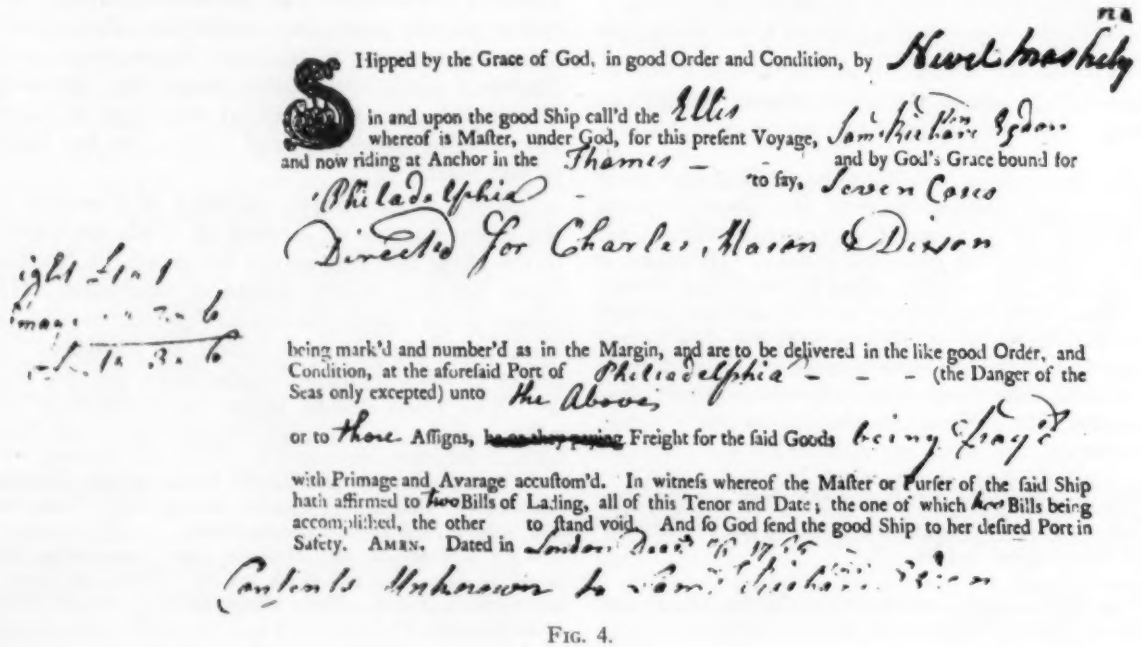
[11] An account of Mr. Mason's paper, concerning the going of Mr. Ellicott's clock, at St. Helena; by James Short, M.A. F.R.S., *Phil. Trans.* **52** (2), art. 87, 1762 (pub. London, 1763).

specific mention of a rating of the clock is found in the report. However, in his letter to Mason and Dixon written from Greenwich on November 8, 1865, Maskelyne says that he had observations for finding relative values of gravity "here (at Greenwich), at St. Helena, the Cape of Good Hope, and Barbados."

It has already been mentioned that Astronomer Royal Maskelyne by letter to Mason and Dixon, dated Greenwich, February 24, 1767, directed them to send the Royal Society's clock home from Pennsylvania immediately, because it "must be put in order directly for the ensuing transit of Venus over the Sun." And it has been noted that the clock was reported safely home and "going at the Observatory" by the Astronomer Royal at a Council meeting held on November 19, 1767. At this same meeting the Astronomer Royal reported preliminary plans for observing "the ensuing transit." Benjamin Franklin was present as a member of the Council.

During 1767 and 1768 the Royal Society organized expeditions to observe the transit of Venus due to occur on June 3, 1769. Astronomer Royal Maskelyne published a pamphlet of instructions for observers as a supplement to the *Nautical Almanac*. Charles Mason was chosen to observe the transit in northern Ireland. Jeremiah Dixon went with an expedition to Hammersfest and North Cape. An expedition was recruited to winter at Fort Churchill on Hudson Bay as guests of the Hudson's Bay Company and to observe the transit there. The American Philosophical Society undertook to observe from stations near Philadelphia. And the Admiralty agreed to send the *Endeavour* with Lieutenant James Cook in command to take an expedition to the South Seas. Cook was already favorably known both to the Admiralty and to the Royal Society. Charles Green was selected as astronomer. He had served as assistant observer at Greenwich Observatory, succeeding Charles Mason in that post. And he had accompanied Maskelyne on his expedition to the Barbados to test Harrison's chronometer. Joseph Banks Esq. F.R.S., later President of the Royal Society, with a group of scientists as his guests, was among the ship's company.

Minutes of *Councils* and *Philosophical Transactions* have been scrutinized to learn what role John Shelton's Regulator played in this world-wide drama. At a Council meeting held on May 5, 1768, it was resolved that there be provided "for the use of the Observers in the Southern latitudes," among many other pieces, "an Astronomical Clock and alarum Clock now at the Royal Observatory." Mr. Ellicott's clock, which Mason and Dixon had taken to the Cape of Good Hope and to St. Helena, was designated for the "use of the Observers at Hudson's Bay" at a meeting of Council held on March 10, 1768. Astronomer Royal Maskelyne was asked to prepare instructions for observers who were preparing to sail for


Shipped by the Grace of God, in good Order and Condition, by Nevil Maskelyne

in and upon the good Ship call'd the Ellis whereof is Master, under God, for this present Voyage, Sam.l Shelton Esqr. and now riding at Anchor in the Thames and by God's Grace bound for to say, Philadelphia Seven Casks Directed for Charles Mason & Dixon

being mark'd and number'd as in the Margin, and are to be delivered in the like good Order, and Condition, at the aforesaid Port of Philadelphia (the Danger of the Seas only excepted) unto the Above

or to Assigns, Freight for the said Goods being Stay'd with Primage and Avarage accustom'd. In witness whereof the Master or Purser of the said Ship hath affirmed to Two Bills of Lading, all of this Tenor and Date; the one of which Two Bills being accomplished, the other to stand void. And so God send the good Ship to her desired Port in Safety. AMEN. Dated in London Dec.r 16 1765

Contents Unknown to Sam.l Shelton Esqr

FIG. 4.

Fort Churchill and for the South Seas during 1768. Instructions prepared for Lieutenant Cook and Charles Green are spread upon *Minutes* of *Councils* for June 23, 1768. Among them appear the following:

put the bob of the pendulum of the clock at the same height exactly, as it was at the Royal Observatory at Greenwich before the voyage by means of the Marks made upon the Pendulum for that purpose, in order to find the Difference of Gravity, between Greenwich and your place of Observation.
Observe corresponding Altitudes of the Sun every Day, when the Weather permits in order to find the going of your Clock.

Minutes of a *Council* held on July 21, 1768 reveal that

Capt. James Cook and Mr. Charles Green attended the Council and signed the following list and receipt of Instruments . . . belonging to the Royal Society of London . . . to be used in the Observation of the ensuing transit of Venus and in other observations in their voyage to the Pacific Ocean and home. . . . An Astronomical Clock, An Alarum Clock, A Journeyman Clock, . . .

The expedition to the South Seas observed the transit of Venus of June 1769 from the island of Tahiti, then called King George's Island. The report is published in *Philosophical Transactions* for 1771 under the title "Observations made by appointment of the Royal Society, at King George's Island in the South Sea; by Mr. Charles Green, formerly Assistant at the Royal Observatory at Greenwich and Lieutenant James Cook, of his Majesty's Ship the *Endeavour*." Quotations from this report now follow:

At Fort Venus, Royal Bay, King George's Island, 1769, April 15. The astronomical clock, made by Shelton and furnished with a gridiron pendulum, was set up in the middle of one-end of a large tent, in a frame of wood made for the purpose at Greenwich, fixed firm and as low in the ground as the door of the clock-case would admit, and to prevent its being disturbed by any accident, another framing of wood was made round this, at the distance of one foot from it. The pendulum was adjusted exactly to the same length as it had been at Greenwich . . . 1769, h, July 8. Took down the clocks and Observatory; the Pendulum vibrated 1° 55′ on each Side the Center, the Bob remained as at Greenwich.

The daily loss of the clock is tabulated from 1769, May 10 to 1769 July 6 and comment follows:

The daily rate of the clock's losing on mean time, by means of these 40 results, is 20.8 seconds. By the first and last day's observations compared together, the clock lost 19′ 49″.9 on mean time in 57 days which is at the rate of 20″.88 or 20″.9 per day. The swing of the pendulum on each side of the perpendicular during this time varied between 1° 50′ and 1° 55′.

The Astronomer Royal added a "REMARK":

The same clock, when fixed up at the Royal Observatory at Greenwich, before the voyage, with the pendulum of the same length, got at the rate of 1′ 45″.8 per day, on mean time, between April 19 and July 18, 1768. Therefore the force of Gravity at Greenwich is to that at King George's Island as 1000000 to 997075 N. M.

In the light of all the bits of evidence the writer concludes that the clock which sailed with Cook and Green to the South Seas was either the clock that Mason and Dixon used in the Forks of the Brandywine or its identical twin. And nowhere in all the literature has there been even a hint of the existence of a twin.

The years 1760 to 1769, both inclusive, round out the first decade of John Shelton's Astronomical Regulator which at this very moment is ticking away the last years of its second century in Burlington House, London.

Evidence has been found that the clock accompanied Astronomer Royal Maskelyne to Perthshire in 1774 and was the "astronomical clock by Shelton . . . which had been provided on occasion of the observations of the transit of Venus in 1761 or 1769" that he reported using when he measured the deflection of a plumb line caused by the attraction of Mountain Schehallien in Perthshire. And in 1819 Lieutenant W. E. Parry commanded the *Hecla* on a voyage to the Arctic. Captain Edward Sabine was astronomer of the expedition. They wintered on Melville Island, set up an observatory and made pendulum experiments. In his *History of the Royal Society* (2: 284–286, 1848), C. R. Weld says "The clocks used in the pendulum experiments were the property of the Royal Society, and the same which had accompanied Captain Cook round the world." They "were made by Shelton." John Shelton's Astronomical Regulator is the symbol of an era two centuries ago when geodetic and geophysical inquiry was first reaching out from London to the far corners of the Earth and was linking those corners together. A swinging pendulum of constant length linked Greenwich to St. Helena, to the Cape of Good Hope, to Barbados, to southeastern

Pennsylvania, to Tahiti, and to many other regions. The surface of the Earth includes them all. What is the shape of this surface? To others who are interested in this grand old pendulum clock the writer must leave a critical examination of its record since mid-summer of 1769.

DESCRIPTION OF A CLOCK BY JOHN SHELTON, OWNED BY THE ROYAL SOCIETY AND USED BY MASKELYNE ON HIS VISIT TO ST. HELENA IN 1761, AND PROBABLY BY MASON & DIXON IN PENNSYLVANIA.

H. Alan Lloyd, F.B.H.I.

The clock we are describing is not, strictly speaking, an astronomical clock, since it does not record any movement of the moon, planets, stars or give any other astronomical readings. Rather is it of the regulator type which is commonly used for astronomical observations, hence perhaps the confusion of terms.

Fig. 5.

Its dial design and lay out are that of an ordinary long-case clock, but the movement has various refinements which bring it within the regulator class.

Normally, regulators have minute and second hands only; the hour being shown by means of an engraved disc revolving behind the dial, an arc of which shows through a slit in the dial.

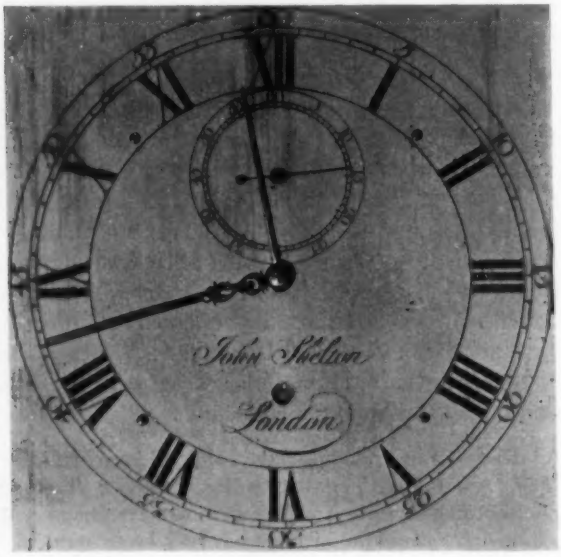


Fig. 6.

The Case, as will be seen from figure 5, is of very clean and pleasing lines, being made of mahogany. It is 5 ft. 7 in. high; 1 ft. 4 in. wide and 9½ in. deep. It now stands on a base, 11 in. high, which was probably added in 1873, the year the Royal Society moved to Burlington House.

The Dial, which is silvered all over (a fairly early application of this style) is screwed to the distance pillars between it and the front plate, again an early example of the development. Nor-

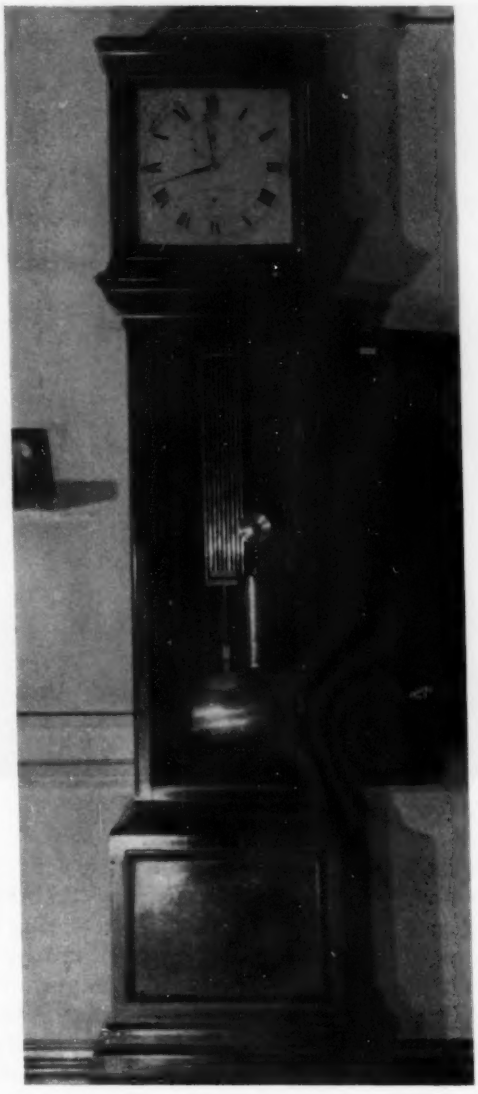


FIG. 7.

mally up to this period, dial pillars were rivetted into the dial plate. To the right of the dial, beside the figure III, is the level for the maintaining power, which keeps the clock going for those few seconds during which the force of the weight is non-operative while winding. This maintaining power is of a peculiarly elaborate bolt and shutter type. When the lever at the side is depressed, the shutter covering the aperture giving access to the winding square is set aside allowing the key to be inserted.

The Hands, as will be seen from figure 6, the seconds hand is compensated; the hour and minute hands are not. In these cases the compensation is provided for on the hour and minute wheels respectively. Counterbalancing segments can be seen affixed to these wheels in figures 8 and 9. This method had been introduced earlier by Quare.

The hour hand is a modern replacement in brass, which is not correct, either for style or metal. Since Shelton had adopted an ordinary long case type of dial, we can assume that the minute hand, which is correct for the period, is original; in which case the hour hand should be of the same style.

The Movement is shown in figures 8 and 9. It will be noticed that the distance pillars are rivetted to the back plate, which is usual, but that they are fixed to the front plate by hinged latches; a method adopted by Tompion and others at the end of the seventeenth century; at this period almost universally supplanted by tapered pins passing through the protruding head of the pillars.

The escapement is dead beat and has the long neck favoured by Graham.

A refinement not usually found in long case clocks, especially those expected to be in the

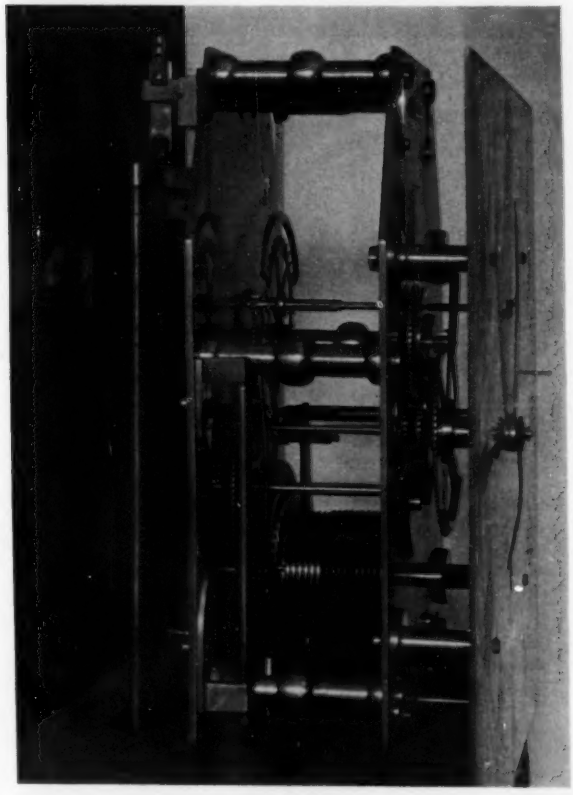


FIG. 8.

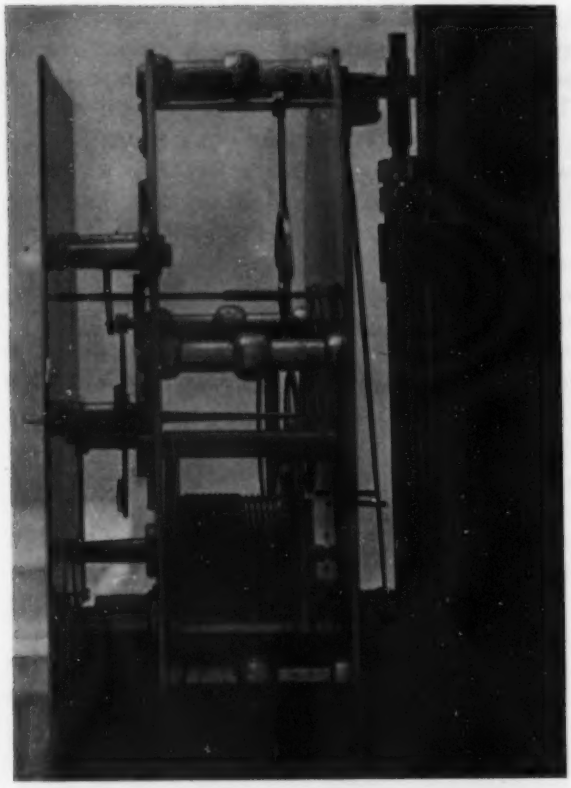


FIG. 9.

FIG. 10.

hands of persons likely to handle them with care, is a winding stop, such as usually found in bracket fusee clocks of this period. The bent spring rod actuating this feature is seen on the left of figure 8. The winding cord is of plaited silk, not gut, which is usual at the period. While this point is interesting it is not possible to say whether the silken cord is original. It is more likely to be so than if it had been of gut. Otherwise there is nothing remarkable about the movement beyond really good workmanship. There are no jewels or roller bearings.

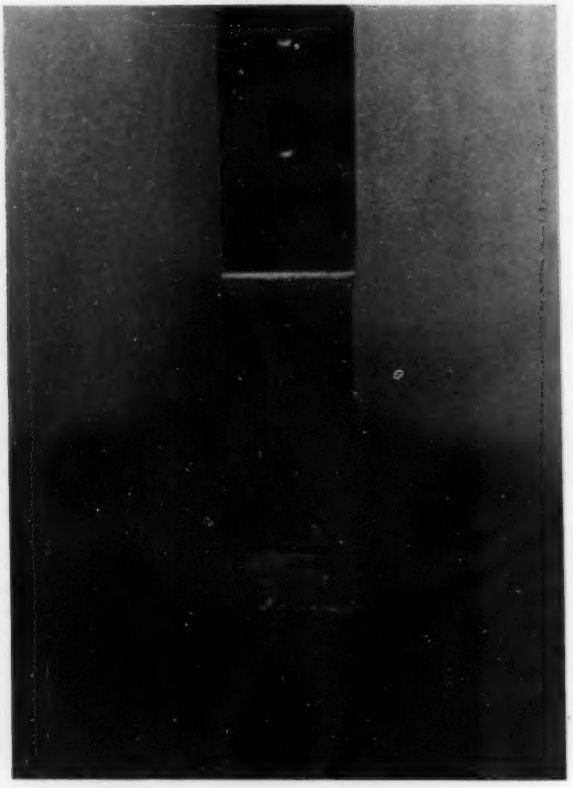


FIG. 11.

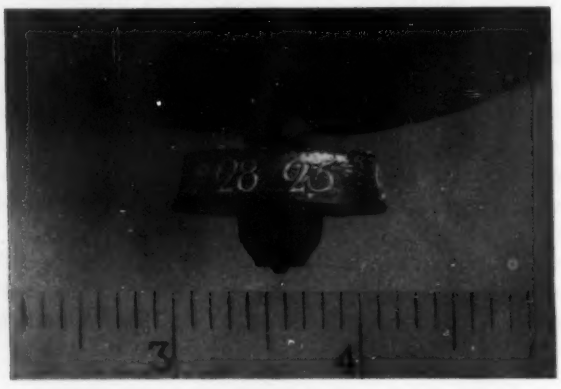


FIG. 12.

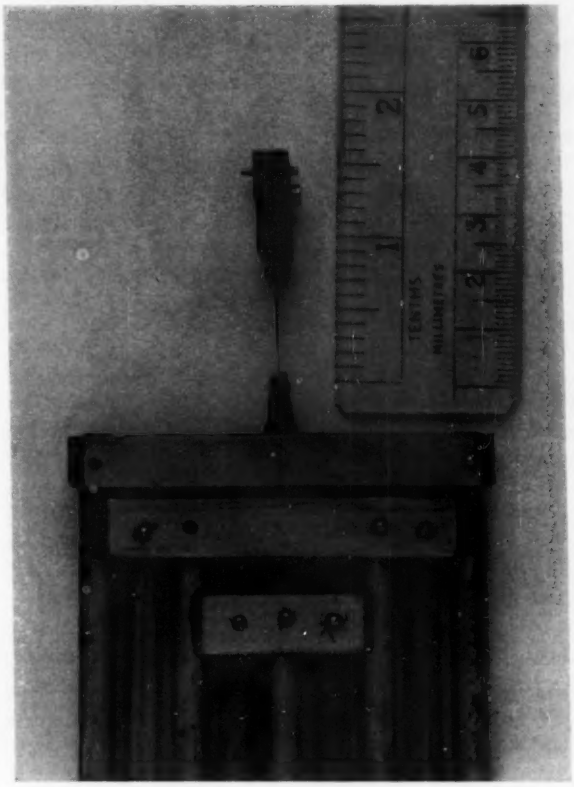


FIG. 13.

The Pendulum is of the Harrison Gridiron type with 9 bars, 5 of steel and 4 of brass. As will be seen from figures 8 and 9, the hole for the crutch arm is low down in the pendulum. Figure 13 shows the short suspension spring.

In *Philosophical Transactions,* vol. 52 for 1761, pp. 437 & 438, is described how the pendulum was not removed for the transit to St. Helena, but was held between two shaped blocks of wood, which were bolted to the back of the case. The holes so made in the backboard of the case are clearly seen in figure 7 around the pendulum bob. The description further states that the upper part of the pendulum was kept in place by two little pieces of wood; the brackets to which these were screwed are no doubt those seen affixed to the back of the case in figures 8 and 9.

On setting up at St. Helena the pendulum was adjusted to the mark on the rod made by Bradley when rating the clock at Greenwich. This mark is the upper of the two seen in figure 10. The lower one would then coincide with the bottom of the slot out in the bob. The final adjustment was by setting, to a given number, the rating nut below the pendulum, seen in figure 12. The rate Bradley gave was a losing one of 11 secs. daily on sidereal time, at 50 deg. F.

The clock is a monthly one.

JEREMIAH DIXON (1733–1779)—A BIOGRAPHICAL NOTE *

H. W. ROBINSON

Lately Librarian of the Royal Society of London

MANY new facts relating to Jeremiah Dixon have come to light and now that a connected account of the principal events in his life has been obtained, it seems worth while to record it. Dixon was Mason's companion and colleague at the observation of the Transit of Venus in 1761 at the Cape of Good Hope. He will also be remembered for his work with Mason on the boundary line between Maryland and Pennsylvania.

The family of Dixon in Durham County, England, was an extensive one and was a branch of the Longstaffs (Langstaffs) of Teesdale. Many members of the family bore the same Christian names and this has caused some confusion, as also have the intermarriages and other ramifications. These have misled some historians, and erroneous statements, conclusions, and traditions regarding the family have appeared in the printed local histories. The father of Jeremiah has been described as of various professions. In many references he is mentioned as the famous butler of Raby Castle, whereas, in fact, it was his uncle who held that position. Other mistakes have been made with regard to Jeremiah—the statements that he "was one of the inventors of coal-gas" and that he "invented many appliances for use in mines" must be discounted. They should be attributed to his well-known brother, George Dixon. From the evidence available it appears that Jeremiah Dixon was not interested in coal-mining. He was a practical man who had a profound knowledge of mathematics which he applied to his skill in mechanics. He was a surveyor of outstanding merit and a good draughtsman.

Jeremiah Dixon was born at Bishop Auckland on 27 July 1733. He died unmarried at Cockfield on 22 January 1779 and was buried at the Friends' Burial Ground, Staindrop, in Durham County. His will, dated 27 December 1778, was proved at Durham in 1779. His father was George Dixon of Cockfield (1701–1755) and he was a coal-mine owner. He died on 3 December 1755. His will was dated 8 November 1755 and it was proved at Durham in 1759. It read as follows:

Will of George Dixon of Cockfield, yeoman. To eldest son George Dixon my freehold House and garth, situate in Cockfield, after the decease of my wife Mary. I charge the above premises with the sum of £30 to my daughter Elizabeth Dixon. My freehold House with appurtenances in Newgate Street, Bishop Auckland, to my wife and after her death, to my two sons Jeremiah and Ralph. My copyhold House and close, situate at Cockton Hill near Bishop Auckland to daughter Hannah Dixon and her heirs. Residue to wife and son George, and appoint them Executors.

The mother, Mary Hunter (1694–1773), came from Newcastle. She has been described as "of the small shoe" and is said to have been the "cleverest woman" that ever married into her husband's family. It is at least certain that marked ability shewed itself in her children. Born on 11 August 1694, she married George Dixon on 28 February 1724 and died on 16 January 1773. Her will, dated 20 August 1763, was proved at Durham in 1774. There were seven children of this union.

It is known that Jeremiah received his early education at John Kipling's School at Barnard Castle and it was here that he first became interested in mathematics and astronomy. Apparently he did not think much of the teaching at the school for when later examined at the Royal Military Academy at Woolwich he is reported to have stated that his seat of learning was "a pit cabin upon Cockfield Fell."

From the time when Jeremiah left school until 1760 we must assume that he had some training in surveying work and it was then that he decided to adopt this work for his profession.

He had from an early age made the acquaintance of many eminent men (all of kindred genius) who emanated from South Durham in the eighteenth century. He was on very intimate terms with William Emerson, the celebrated mathematician of Hurworth, County Durham, and also with John Bird of Bishop Auckland, the well-known mathematical instrument maker. Thomas Wright, the natural philosopher, was also a member of this group and he must have had some influence upon Dixon.

* Research was carried out with the aid of grants from the Penrose Fund of the American Philosophical Society.

In all probability John Bird, who was an active Fellow of the Royal Society, recommended Dixon as a suitable companion to accompany Mason. According to records existing in the family, Dixon was examined at the Royal Military Academy at Woolwich before he was appointed. A search of the minute books of the Ordnance Board (a body which among other activities governed the Academy) has been made, but no mention of any such examination has been found. It is quite likely that the interview was a personal one in order to satisfy the Royal Society that Dixon was a suitable man for the work.

There is a family tradition and it has appeared in print on many occasions that Dixon wore military uniform from 1760 until his death consisting of a long red coat and a cocked hat. This story must be wrong, as his name does not appear in any army lists and he was never in any way connected with the army. One account mentions that he wore the uniform of the Royal Engineers. The engineers attached to the army in those days were civilians and they had no uniform. Dixon merely adopted as ordinary dress a long red coat and—as so many people of the period did—a cocked hat. This has led historians to assume that he either held commissioned rank or that he wore military uniform without permission. A "long red coat and cocked hat" had no significance.

Although a recognized Quaker and a member of a large family of Quakers, Jeremiah's behaviour was not all it should have been, for the following entry appears in the Quaker Minute Book of Raby, under the date of 28 October 1760:—

> Jery Dixon, son of George and Mary Dixon of Cockfield disowned for drinking to excess..

In this he had apparently inherited a family weakness, for his father on many occasions repented of his "loathsome practice of Gitting too much Drink."[1] This was the period when gin drinking was at its height and it may be that the habit acquired by both father and son undermined their health so much as to lead to their early deaths.

Dixon went with Mason to observe the Transit of Venus in 1761 at the Cape of Good Hope and from there they journeyed on to St. Helena to join the Rev. Nevil Maskelyne. They all eventually returned to England in 1762. It is presumed that between this time and the time when they again left England Dixon returned to his home where he may have enjoyed a holiday. The two men, Mason and Dixon, left England again in 1763 to go on a special mission on behalf of Mr. Penn and Lord Baltimore to measure the boundary line between Maryland and Pennsylvania. They returned once again to England in 1768, only to find that the Royal Society required their services to observe the Transit of Venus of 1769. Mason this time went to Ireland, whilst Dixon was sent to the Island of Hammerfest. Particulars of the work that these two men performed on behalf of the Royal Society are given in the *Philosophical Transactions*.

A story is told that one day, whilst in America, Dixon came across a slave driver mercilessly beating a poor black woman. Going up to him he said: "Thou must not do that!" He received the curt answer: "You be d....d! Mind your own business." Dixon's reply was: "If thou doesn't desist I'll thrash thee!" Then righteous wrath overcame his Quaker principles. He was a tall and powerful man, and an imposing figure, so without more ado he seized the slave-driver's whip and with it gave him the sound thrashing that he richly deserved. Dixon kept the whip as a trophy and took it back with him to Cockfield, where it was long regarded as a family treasure.

Returning to his native place after his expedition to Hammerfest, Dixon resumed his work as a surveyor. Like many members of his family, he was a fine draughtsman and evidence of this is shown in a magnificent piece of penmanship on vellum entitled "A plan of the Park and Demesnes at Auckland Castle, belonging to The Right Revd. Father in God, John Egerton Lord Bishop of Durham. Taken in 1772 by Jere. Dixon." This now hangs in Auckland Castle. It was purchased and presented to the Bishop of Durham by Mr. Waynham Dixon.

Among other places which were surveyed and measured by Dixon was Lanchester Common or Moor, the largest in the county of Durham. This work was done in 1773.

The Theodolite used by Dixon for his work in America is in the Museum of the Royal Geographical Society in London. It was presented by Mr. Edward Dixon of Hull, a descendant of the family.

In the *Newcastle Courant* of 30 January 1779 appeared the following announcement of Dixon's death:

> Last week at Cockfield, near Staindrop, Mr. Jeremiah Dixon: a gentleman eminently distinguished for his mathematical knowledge.

[1] Letter reported to the Society of Friends at Raby on June 6, 1745.

His Will read as follows:

1778 Dec. 27. Will of Jeremiah Dixon of Cockfield Co. Durham, gentleman. I devise my copyhold houses, garth, garden, dye-houses and premises within the manor of Bondgate in Auckland to my good friend John Raylton and his heirs upon trust and for the benefit of Margaret Bland, and I further desire that any profits becoming due from these premises shall go towards the maintenance of the two daughters of the said Margaret Bland, namely Mary and Elizabeth, until 21 at which age the said copyholds are to go to them equally. I devise unto my brother Ralph Dixon my freehold dwelling houses, dye-houses, garden and premises in Staindrop. The residue to my sister Elizabeth Dixon and her heirs, and appoint her sole Executrix. [Proved Durham 1779.]

I am indebted to my friend, Mr. Arthur Douglas of Hull, for his kindly interest in enquiries addressed to him and through him, the help of the County Librarian and the Librarian of the Newcastle Public Library and to many members of their staffs.

PRINCIPAL AUTHORITIES

Original Material

Somerset House, London. Original wills of many members of the Dixon family including those of George and Mary Dixon and their son Jeremiah.

Minute Books of the Quaker Society at Raby in Co. Durham.

These contain information concerning Jeremiah Dixon and his father as well as copies of letters from the latter.

Printed Works

LONGSTAFF, GEORGE BLUNDELL. 1923. The Langstaffs of Teesdale and Weardale. Rev. ed., London.

This work is the principal authoritative source on the Dixon family. It contains a detailed pedigree covering the period from 1650–1880, entitled "Dixon of Raby and Cockfield, Co. Durham." The author had access to many family papers and was able to record traditions handed down by descendants.

BAILEY, JOHN. 1810. General view of the agriculture of the County of Durham, 290–292.

Gives particulars of the discoveries of George Dixon, Jeremiah's brilliant brother.

HOLLIS, H. P. 1934. Jeremiah Dixon and his brother. *Jour. Brit. Astron. Assn.* **44**: 294–299.

Geographical Journal **47**: 1–3, 1916.

Gives a description and a photograph of the Theodolite used by Dixon in America.

Monthly Chronicle of North Country Lore and Legend, 245–246, June 1890.

Records some traditions regarding Jeremiah Dixon. Inaccurate in parts.

PENNEY, NORMAN. My ancestors. Privately printed. Contains information on the Dixon family.

SMITH, HENRY ECROYD. 1878. Annals of Smith of Cantley, Balby, and Doncaster, County York. Privately printed.

SOME AMERICAN STUDENTS OF "THAT SHINING ORACLE OF PHYSIC," DR. WILLIAM CULLEN OF EDINBURGH, 1755–1766*

WHITFIELD J. BELL, JR.

Associate Professor of History, Dickinson College

THE second day after young Thomas Parke reached Edinburgh in October 1771 to begin a winter's work at the medical school there, he went into Mint Close off the High Street to present his letters of introduction from his Philadelphia teachers John Morgan and Benjamin Rush to "yt. shining Oracle of Physic, which I have so long wish'd to see. I mean the great Dr. *Cullen* who I found quite equalled my expectations." [1] Doubtless Parke's expectations were high, for Dr. Morgan used to call Cullen the Boerhaave of the age, while Dr. Rush was his enchanted disciple. Indeed every American medical student who went abroad between 1760 and 1790 must have had great expectations of Dr. Cullen, for their preceptors and professors, like Parke's, had told them about Cullen, sometimes quoted him as authority, and in some cases even repeated his very lectures to their classes in Philadelphia and New York. They very naturally therefore looked forward to their first meeting with that unceasing fountain of medical knowledge with keen anticipations of pleasure and profit, not unmixed with apprehensions, for they knew Cullen was a great man.[2] But they did not know so well that he was also a kindly one, and so they were never quite prepared for the moment when, after rapidly scanning their letters, the great Dr. Cullen took them by the hands in the warmest manner imaginable and welcomed them to the Edinburgh college and his own home, assuring them he had a special measure of esteem for Americans and commanding them to visit him often.[3] This experience was one they always recalled afterwards with emotions of gratitude. Cullen never disappointed the Americans' expectations. He was in fact for more than thirty years, in the words of another American student, "the Idol of his Pupils." [4]

One of the first of his American students, Samuel Bard of New York, wrote his father about Cullen's course in chemistry in 1762. Through the boy's awkward phrases there appears something of Cullen's method and some intimation of the influence he had on his students.

> Doctr. Cullen has now finished the first Part of his Course upon the objects of Chemistry, and has entered upon the second or the opperations of Chemistry. he began with acquainting us, that the changes of the qualities of Bodies, produced by Chemistry, were all of them produced by Combination or Seperation which he proves in a maner not only Conclusive but at the same time very entertaining, he next proceeds to inform us upon what these two general heads Depend in doing which he is to be more full here after, as he goes along he explains his Theory by a variety of experiments, his two last Lectures were upon the Instruments made use of to assist Solution;—his Intention in this part of his Course, is not only to give us some account of the method of opperating in Chemistry, but likewise to instruct us in the Language of that Science, and enable us to prefix proper & clear Ideas to the Terms made use of in it.[5]

And once or twice a week, Bard continued in another letter to his father, Cullen invited his advanced students (that is, those who were taking the course for the second time) to his house where, "surrounded by his admiring Pupils," he lectured for an hour on what he called chemical pathology and the group spent another hour

* Most of the material for this paper was found in Edinburgh in the summer of 1949, when the author had the assistance of a grant from the Penrose Fund of the American Philosophical Society. For that help he here gladly records his deep sense of gratitude. Photostat copies of the pertinent documents were procured for the Society and are in the possession of its Library. The author also wishes to express his appreciation of the services, so swiftly and efficiently performed, of Mr. Thomas H. Graham, Librarian of the Royal College of Physicians of Edinburgh, and Mr. C. P. Finlayson, of the library of the University of Edinburgh.

[1] Parke, Thomas, Journal, Oct. 22, 1771, Pemberton Papers **57**: 93–98, Hist. Soc. Penna.

[2] Benjamin Rush to William Cullen, Phila., June 17, 1786, Cullen Mss., Correspondence **13**, Royal College of Physicians of Edinburgh.

[3] Benjamin Rush to John Morgan, Edinburgh, Nov. 16, 1766, Gratz Collection, Hist. Soc. Penna.; Parke, *op. cit.*

[4] John R. B. Rodgers to Benjamin Rush, Edinburgh, July 20, 1785, Rush Mss. **15**: 6, Library Co. of Phila.

[5] Samuel Bard to John Bard, Edinburgh, Dec. 29, 1762, Bard Collection, N. Y. Acad. Med.

in an easy Conversation upon the subject of the last evenings lecture, & every one is incouraged to make his Remarks or Objections with the greatest freedom & ease. it must certainly make him very happy . . . to see so many even from the Wilds of America crouding his Lectures, and listening to him with the greatest pleasure and attention—for he never speaks but you may see these emotions painted in the faces of allmost all his hearers & so universal a silence reigns that was a pin to drop it would be distinctly heard.[6]

When they were graduated and had returned to America, his old students maintained a friendly correspondence with him on personal and medical subjects. Samuel Miller, for example discussed the conditions of practice in South Carolina and sent him three cases. William Brown, of Alexandria in Virginia, offered reflections on American politics in 1788. Walter Jones sent Cullen news of himself and of fellow-students, with some comments on practice in Virginia.

The most worthy Blair returned to his native Country with ill health, and a mind by no means at ease—he Soon after married an insidious woman, whose exquisitely tormenting arts, with no small aid from Ld. Dunmore, precipitated his Death, about twelve months after marriage.

Lee has long entered on the political Career, & his public character, cannot be unknown to you—he has however neither been fortunate or happy.—

Steptoe, Campbel, Ball are dead—Griffin is still in practice, tho so far from me that I seldom have seen him.—McLurg enjoys the love & good opinion of all who know him.

The primest Season of my own Life has been Spent amid the clamours of discord, and the Storm of war and revolution, so that neither my fortune or contentment have been so flourishing as they might have been—however, having been lucky enough to escape the ravages of War, tho for several years, they were impending around me, I possess a Comfortable Competency, and a respectable degree of reputation.—

. . . the State of our practice here, is uncommonly against the proper occasions of making [medical observations]—our patients are dispersed, it is impracticable to visit them often enough, & there is a general disposition in our people, to desist from calling in aid, especially of the more reputable Sort, until the last Extremity.—[7]

Sometimes there was a promising student to send to Edinburgh; the letters of introduction were always an opportunity to remind Cullen of his old students' friendship and gratitude and to tell him some personal news. Introducing a young man who "cannot think himself perfect till he has received the last polish from your improving Lectures," Dr. William Shippen, Jr., of Philadelphia recalled himself to his former teacher's mind as "a Pupil who was as fond of a Solan Goose as you were."[8] After the Revolution his students hastened to assure Cullen of their undiminished friendship and respect; they testified again and again to the advantages they had received from his instruction. "From you," Samuel Miller wrote him, "I have chiefly received what knowledge of Medicine I have, I have often regreted that I could not attend more than I did. However your *First Lines* has in a Manner made up for that loss In every dubious case I have recourse to them."[9] To William Brown Cullen's teaching had been "the Polar Star of my progress in the study & practice of Physic."[10]

The foundations of this extraordinary reputation and influence were laid when Cullen was Professor of Chemistry at Edinburgh. No narrow scientist, he appreciated the importance of chemistry for agriculture and manufacturing as well as for medicine, and he was thus in a sense a pioneer of modern industrial chemistry. More than this, he was a skilful teacher and an impressive lecturer, with a knack for simplifying (he often oversimplified) knotty questions and for organizing masses of facts. Seventeen students registered for his first course at Edinburgh in 1755. The next year there were fifty-nine. So popular were his lectures and so rapidly did the medical school grow, partly because of them, that in his ninth course, in 1763, Cullen taught a class of one hundred forty-five. In addition to chemistry, he taught a course in materia medica in the winter of 1760–1761, in which several Americans were enrolled. After eleven years, in 1766, Cullen was transferred to the chair of Institutes, or Theory, of Medicine, where his influence was increasingly impressively great.[11]

[6] Samuel Bard to John Bard, Edinburgh, Feb. 4, 1764, Bard Collection, N. Y. Acad. Med.

[7] June 5, 1786, Cullen Mss., Letters to Dr. Cullen, 1774 to 1790, Royal College of Physicians of Edinburgh.

[8] Phila., April 27, 1784, Cullen Mss., Letters to Dr. Cullen, 1779 to 1788, Royal College of Physicians of Edinburgh. Reprinted in Comrie, John D., An eighteenth century consultant, *Medical Life* **32**: 128–135, 1925.

[9] St. Stephen's Parish, Santee River, S. C., Oct. 6, 1789, Cullen Mss., Letters to Dr. Cullen, 1774 to 1790, Royal College of Physicians of Edinburgh.

[10] Brown to William Cullen, Alexandria, Va., July 19, 1788, Cullen Mss., Correspondence **15**, Royal College of Physicians of Edinburgh.

[11] There is a brief sketch of Cullen in the *Dictionary of National Biography*. The "standard" life, a poor one, is

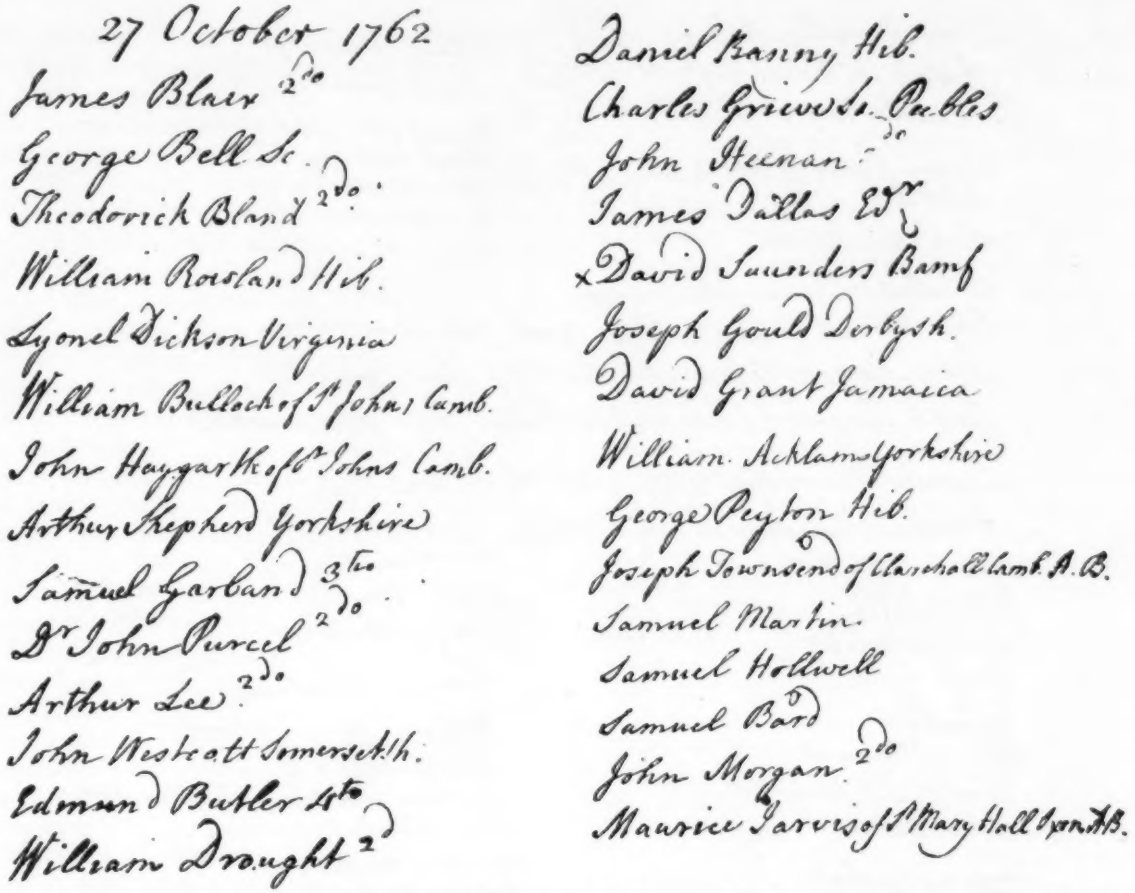

27 October 1762
James Blair 2do
George Bell Sc. 2do
Theodorick Bland 2do
William Roslan Hib.
Lyonel Dickson Virginia
William Bullock of St Johns Camb.
John Haygarth of St Johns Camb.
Arthur Shepherd Yorkshire
Samuel Garland 3tio
Dr John Purcel 2do
Arthur Lee 2do
John Westcatt Somersetsh.
Edmund Butler 4to
William Drought 2d
Daniel Kenny Hib.
Charles Grieve Sc. Pubblos
John Heenan 2do
James Dallas Edr
David Saunders Banff
Joseph Gould Derbysh.
David Grant Jamaica
William Acklam Yorkshire
George Peyton Hib.
Joseph Townsend of Marshall Camb. A.B.
Samuel Martin
Samuel Hollwell
Samuel Bard
John Morgan 2do
Maurice Jarvis of St Mary Hall Oxon A.B.

FIG. 1. A page of Dr. William Cullen's list of his "Students in the college of Chemistry" for the year 1762. Note the names of the American students James Blair, Theodorick Bland, Lyonel Dixon, Arthur Lee, Samuel Bard, and John Morgan. From the original manuscript in the library of the University of Edinburgh; reproduced by the kind permission of the Librarian of the University.

During the period he taught chemistry at Edinburgh Dr. Cullen kept a record of his students. This was made in a small notebook now preserved at the University of Edinburgh Library. After each student's name Cullen entered his place of origin and, when he graduated, he added the notation "M.D." Of the several hundred names in the book, at least forty are those of students from the British colonies of North America.[12] Their names appear in this article. (Fig. 1.)

It is interesting, of course, to know the names of Cullen's American students of chemistry. Happily, the course of study which these young men followed can be nearly completed by adding to Cullen's record the records contained in the Matriculation Books of the University. These last are not always complete and there are some apparent, and doubtless some undiscovered, errors—after 1764, for example, the students no longer signed personally for each course they took, but clerks kept the records. Nonetheless, the Matriculation Books afford a fairly accurate statement of what lectures each student attended at Edinburgh.[13] (Fig. 2.)

Thomson, John, *An account of the life, lectures, and writings of William Cullen, M.D.*, 2 v., Edinburgh, Blackwood, 1832–1859.

[12] The notebook bears the title, in Cullen's hand, "Students in the College of Chemistry." In some cases, Cullen did not specify the colony from which the student came. Thus, one student may appear as from Boston, another from "Nov. Angl.," and a third's place of origin is indicated simply as "America." Students from the West Indies, of course, were regarded as coming from America, but their names have been omitted here.

[13] Where the matriculation record shows a student taking a course for the second or third time, but does not record his first taking of the course, this first taking has been inserted, but in brackets. As for the clinical lectures, because Whytt, Monro, Rutherford, Cullen and Gregory all shared in them, it is almost impossible to know from

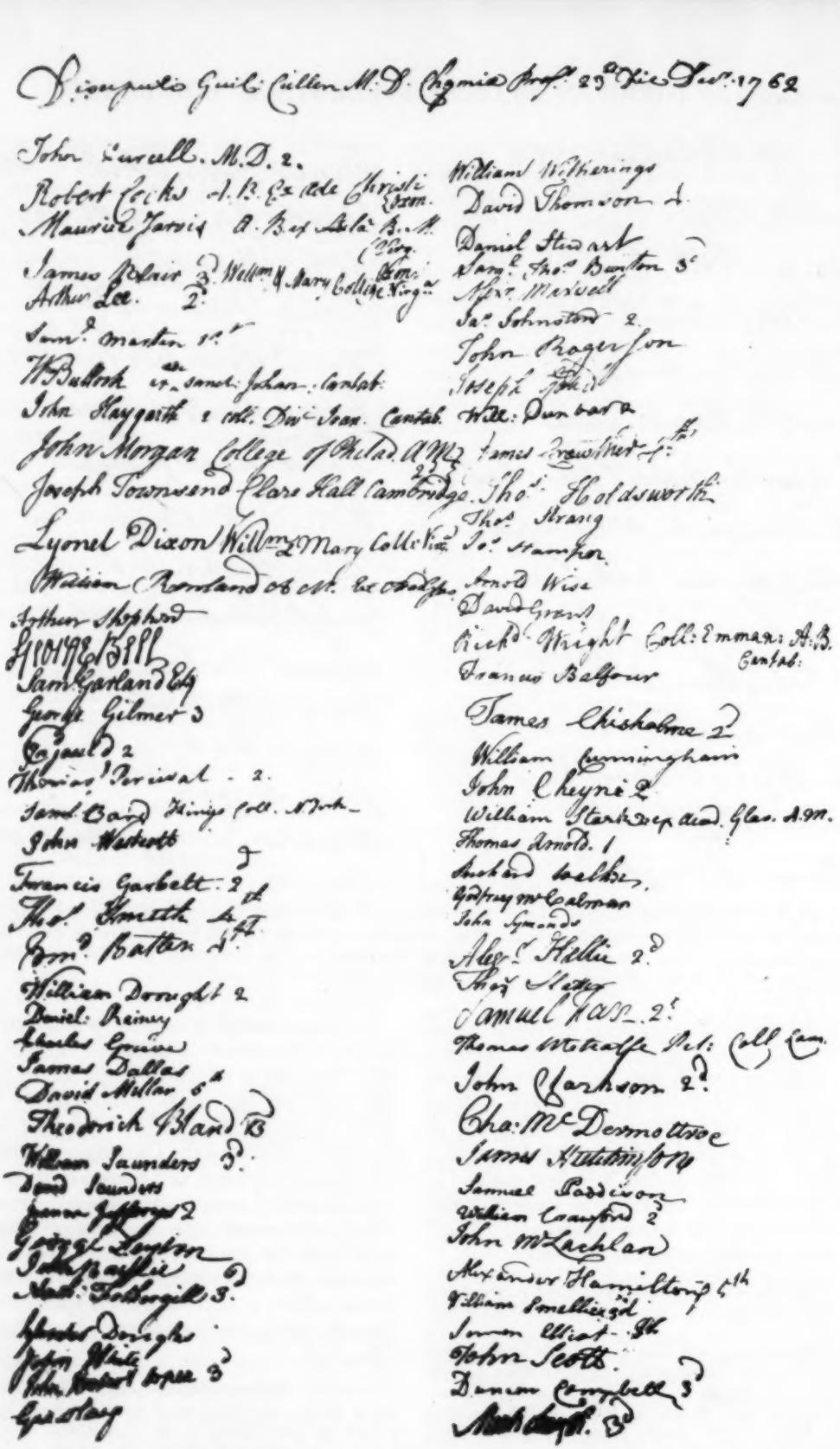


FIG. 2. A page of the Matriculation Record of the University of Edinburgh showing the signatures of students electing Dr. Cullen's course in chemistry in 1762. Note how several of the Americans proudly indicate their undergraduate college. From the original manuscript volume in the library of the University of Edinburgh; reproduced by the kind permission of the Librarian of the University.

An essential, though unofficial, part of the course of medical study at Edinburgh was the work of the student medical societies. In them, once a week during the term, the students met to discuss medical problems, reading one another formal papers they prepared on stated questions. Of the several medical societies that flourished at Edinburgh at this time, none was better known than the Medical (later the Royal Medical) Society of which Cullen himself had been a founder in 1737. Many Americans were elected members of this society and several of them were made annual presidents. Membership in the Medical Society, with the date of election, is indicated in the following compilation.[14]

It is certainly important to know which Americans were graduates of the University of Edinburgh. This information, with the dates and titles of the theses, has long been easily available.[15] It is also important to know what other Americans studied at Edinburgh who did not receive degrees; and it is significant whether they remained at Edinburgh four or five years, like Blair, or only one year, like Noah Hart. Data of this kind for the entire eighteenth century could be obtained by an exhaustive (and exhausting!) study of the Matriculation Books of Edinburgh University. Perhaps some day some one will undertake to make such a study. Meanwhile, for the limited period covered by Cullen's professorship of chemistry, such data are presented here.

From these partial data several conclusions appear justified. In the first place, the total number of Americans who studied medicine at Edinburgh between 1755 and 1766 (and, perhaps, subsequently) was more than twice the number which actually received degrees. Thus Edinburgh's influence on American medical thought and practice, always recognized as great, may properly be regarded as even greater and more pervasive. In the second place, these American students of medicine at Edinburgh were some of the very ties which bound together the European and American spheres of the Atlantic civilization of the eighteenth century.[16]

precisely whom a given student in a given year received instruction. There is also uncertainty about the actual instructors of Theory and Practice after 1765; when in doubt, the author has inserted the names of those who held the chair in question.

[14] *General list of the members of the Medical Society of Edinburgh,* Edinburgh. Printed for the Society by Hay, Gall & Co., 1823; Stroud, William, *History of the Medical Society of Edinburgh,* Edinburgh, Aitken, 1820.

[15] *List of the graduates in medicine in the University of Edinburgh, from MDCCV to MDCCCLXVI,* Edinburgh, 1867. From this Samuel Lewis extracted the names of the American graduates, which he published in the *New England Hist. and Geneal. Register* **42**: 159–165, 1888.

"STUDENTS IN THE COLLEGE OF CHEMISTRY," 1755–1766

William Bankhead. Virginia. 1761–1762, Cullen's Chemistry; 1762–1763, [Hope's Botany and Pharmacy], Ferguson's Natural Philosophy; 1763–1764, Hope's Botany and Pharmacy II, Rutherford's Practice of Medicine. Medical Society, April 10, 1762.

Samuel Bard. New York. 1762–1763, Cullen's Chemistry, [Monro's Anatomy and Surgery], Ferguson's Natural Philosophy; 1763–1764, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Whytt's Physiology and Pathology, Hope's Botany and Pharmacy; 1764–1765, Cullen's Chemistry III, Monro's Anatomy and Surgery III, Whytt's Theory of Medicine II, Rutherford's Practice of Medicine, Clinical Lectures. Medical Society, April 30, 1763. M.D., 1765. "De Viribus opii."

James Blair. Virginia. 1760–1761, Cullen's Materia Medica; [Ferguson's Natural Philosophy]; 1761–1762, Cullen's Chemistry, [Monro's Anatomy and Surgery], [Hope's Botany and Pharmacy], Ferguson's Natural Philosophy; 1762–1763, Cullen's Chemistry II, Whytt's Physiology and Pathology, [Rutherford's Materia Medica?], Ferguson's Natural Philosophy III, [Clinical Lectures]; 1763–1764, Cullen's Chemistry III, [Monro's Anatomy and Surgery II], Hope's Botany and Pharmacy II, Rutherford's Practice of Medicine, Clinical Lectures II; 1764–1765, Cullen's Chemistry IV, Monro's Anatomy and Surgery III, Clinical Lectures III; 1765–1766, Cullen's Chemistry V, Clinical Lectures III; 1766–1767, Cullen's Theory of Medicine, Gregory's Practice of Medicine, Clinical Lectures IV. Medical Society, March 27, 1762.

Theodoric Bland. Virginia. 1760–1761, Cullen's Chemistry, Cullen's Materia Medica, [Ferguson's Natural Philosophy]; 1761–1762, [Ferguson's Natural Philosophy II]; 1762–1763, Cullen's Chemistry II, Whytt's Physiology and Pathology, Ferguson's Natural Philosophy III. M.D., 1763. "De Malo hysterico."

Gustavus Richard Brown. Maryland. 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery; 1766–1767, Monro's Anatomy and Surgery II, Hope's Materia Medica, Cullen's Theory of Medicine; 1767–1768, Black's Chemistry, Hope's Botany and Pharmacy, Cullen's Theory of Medicine II, Gregory's Practice of Medicine, Clinical Lectures, Young's Midwifery. Medical Society, April 4, 1767. M.D., 1768. "De Ortu animalium caloris."

[16] Kraus, Michael, *The Atlantic civilization: Eighteenth century origins,* Ithaca, Cornell Univ. Press, 1949.

Thomas Bulfinch. New England [Massachusetts]. 1756–1757, Cullen's Chemistry. M.D., 1757. "De Crisibus."

Isaac Chanler. South Carolina. 1764–1765, Cullen's Chemistry, Monro's Anatomy and Surgery, Young's Obstetrics; 1765–1766, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Hope's Botany and Pharmacy, Whytt's Theory of Medicine, Russell's Natural Philosophy; 1766–1767, Monro's Anatomy and Surgery, Hope's Botany and Pharmacy II, Cullen's Theory of Medicine, Gregory's Practice of Medicine, Hope's Materia Medica; 1767–1768, Black's Chemistry, Hope's Botany and Pharmacy III, Hope's Materia Medica II, Cullen's Theory of Medicine II, Gregory's Practice of Medicine II, Clinical Lectures. Medical Society, March 26, 1768. M.D., 1768. "De Hysteria."

Thomas Clayton. Virginia. 1756–1757, Cullen's Chemistry. Medical Society, April 2, 1757. M.D., 1758. "De Parca et simplici medicina."

James Clitherall. Carolina. 1760–1761, Cullen's Chemistry. Medical Society, April 10, 1761.

Samuel Colquhoun. Virginia. 1759–1760, Cullen's Chemistry.

Edmund Dana. Boston. 1764–1765, Cullen's Chemistry.

Lionel Dickson. Virginia. 1762–1763, Cullen's Chemistry, Whytt's Physiology and Pathology, [Rutherford's Materia Medica ?], Ferguson's Natural Philosophy; 1763–1764, Cullen's Chemistry II, Hope's Botany and Pharmacy, Rutherford's Practice of Medicine, Clinical Lectures. Medical Society, February 19, 1763.

Joseph Digges. Maryland. 1764–1765, Cullen's Chemistry, Monro's Anatomy and Surgery, Russell's Natural Philosophy; 1765–1766, Cullen's Chemistry, Whytt's Theory of Medicine.

Charles Drayton. South Carolina. 1763–1764, Cullen's Chemistry; 1764–1765, Cullen's Chemistry II, [Monro's Anatomy and Surgery]; 1765–1766, Cullen's Chemistry III, Monro's Anatomy and Surgery, II; 1767–1768, Cullen's Theory of Medicine, Gregory's Practice of Medicine, Hope's Botany and Pharmacy, Hope's Materia Medica, Clinical Lectures; 1769–1770, Gregory's Practice of Medicine II. Medical Society, March 23, 1765. M.D., 1770. "De Venenis."

Joseph Edwards. New England. 1756–1757, Cullen's Chemistry.

Nicholas Eveleigh. South Carolina. 1763–1764, Cullen's Chemistry, Monro's Anatomy and Surgery, Ferguson's Natural Philosophy; 1764–1765, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Whytt's Theory of Medicine, Clinical Lectures, Young's Obstetrics. Medical Society, November 23, 1765.

Samuel Eveleigh. South Carolina. 1764–1765, Cullen's Chemistry, Monro's Anatomy and Surgery. Medical Society. The date of his election is not recorded, but two dissertations read by him to the Society are preserved in its archives at Edinburgh. Their titles are: "Congestion of blood in the veins of the head," and "Hydrophobia."

James Feild. Virginia. 1757–1758, Cullen's Chemistry; 1758–1759 or 1759–1760, [Cullen's Chemistry II]; 1760–1761, Cullen's Chemistry III.

Edward Gantt. Maryland. 1764–1765, Cullen's Chemistry, Monro's Anatomy and Surgery, Hope's Materia Medica; 1765–1766, Cullen's Chemistry II. M.D., Leyden, 1767. "De Variolis."

George Gilmer. Virginia. 1760–1761, Cullen's Materia Medica; 1761–1762, Cullen's Chemistry; 1762–1763, Cullen's Chemistry II, Whytt's Physiology and Pathology, Ferguson's Natural Philosophy; 1763–1764, Cullen's Chemistry III, Rutherford's Practice of Medicine, Clinical Lectures; 1764–1765, Cullen's Chemistry IV.

George Glentworth. Philadelphia. 1758–1759, Cullen's Chemistry.

Corbin Griffin. Virginia. 1762–1763, Cullen's Chemistry, [Monro's Anatomy and Surgery]; 1763–1764, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Hope's Botany and Pharmacy, [Rutherford's Practice of Medicine], Ferguson's Natural Philosophy; 1764–1765, Cullen's Chemistry III, Hope's Materia Medica, Rutherford's Practice of Medicine II, Clinical Lectures, Ferguson's Moral Philosophy, Blair's Rhetoric. Medical Society, September 12, 1763. M.D., 1765. "De Viribus camphorae."

George Haig. Carolina. 1762–1763, Cullen's Chemistry, [Monro's Anatomy and Surgery]; 1763–1764, Monro's Anatomy and Surgery II, Young's Obstetrics.

Noah Hart. New Jersey. 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery, Clinical Lectures.

Walter Jones. Virginia. 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery; 1766–1767, Black's Chemistry, Cullen's Institutes of Medicine; 1767–1768, Cullen's Theory of Medicine II, Hope's Materia Medica, Gregory's Practice of Medicine, Clinical Lectures. Medical Society, March 21, 1767. Annual President. M.D., 1769. "De Dysenteria."

Adam Kuhn. Pennsylvania. 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery, Clinical Lectures; 1766–1767, Cullen's Theory of Medicine, Gregory's Practice of Medicine, Clinical Lectures, Ferguson's Moral Philosophy. Medical Society, November 22, 1766. M.D., 1767. "De Lavatione frigida."

Arthur Lee. Virginia. 1760–1761, Cullen's Materia Medica; 1761–1762, Cullen's Chemistry, [Hope's Botany and Pharmacy], [Ferguson's Natural Philosophy]; 1762–1763, Cullen's Chemistry II, Whytt's

Physiology and Pathology, [Rutherford's Materia Medica?], [Hope's Botany and Pharmacy II], [Clinical Lectures II], Ferguson's Natural Philosophy II; 1763–1764, Cullen's Chemistry III, Hope's Botany and Pharmacy III, Rutherford's Practice of Medicine, Clinical Lectures II; 1764–1765 (Postgraduate), Clinical Lectures III, Russell's Natural Philosophy. M.D., 1764. "De Cortice peruviano."

John Morgan. Philadelphia. 1761–1762, Cullen's Chemistry; 1762–1763, Cullen's Chemistry II, Whytt's Physiology and Pathology, Hope's Botany and Pharmacy. Medical Society, April 9, 1762. M.D., 1763. "De Puris confectione."

John Ravenscroft. Virginia. 1762–1763, Stuart's Humane Letters; 1763–1764, Hunter's Greek, Hope's Materia Medica; 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery; 1766–1767, Monro's Anatomy and Surgery II, Cullen's Theory of Medicine, Clinical Lectures; 1767–1768, Monro's Anatomy and Surgery III, Gregory's Practice of Medicine; 1769–1770, Monro's Anatomy and Surgery IV, Black's Chemistry VI [!], Cullen's Theory of Medicine II, Gregory's Practice of Medicine II. M.D., 1770. "De Ictero."

Henry Reeder. Maryland. 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery, Whytt's Theory of Medicine, Hope's Materia Medica; 1765–1766, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Young's Midwifery. Medical Society, December 28, 1765.

Thomas Ruston. Philadelphia. 1763–1764, Cullen's Chemistry, Monro's Anatomy and Surgery, Whytt's Physiology and Pathology; 1764–1765, Monro's Anatomy and Surgery II, Hope's Materia Medica, Rutherford's Practice of Medicine, Clinical Lectures. Medical Society, April 21, 1764. M.D., 1765. "De Febribus biliosis putridis."

William Shippen, Jr. Pennsylvania. 1760–1761, Cullen's Chemistry, Cullen's Materia Medica. M.D., 1761. "De Placentae cum utero nexu."

William Smibert. New England [Massachusetts]. 1760–1761, Cullen's Chemistry, Cullen's Materia Medica; 1761–1762, Cullen's Chemistry II; 1762–1763 (Postgraduate), Cullen's Chemistry III. Medical Society, October 27, 1761. M.D., 1762. "De Menstruis retentis."

James Smith. New York. 1761–1762, Cullen's Chemistry; 1762–1763, Cullen's Chemistry II. M.D., Leyden, 1764. "De Febribus intermittentibus."

George Steptoe. Virginia. 1762–1763, Monro's Anatomy and Surgery; 1763–1764, Cullen's Chemistry; 1764–1765, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Hope's Materia Medica, Russell's Natural Philosophy. Medical Society, March 29, 1766. M.D., 1767. "De Febre nervosa."

James Tapscott. Philadelphia. 1763–1764, Cullen's Chemistry, Monro's Anatomy and Surgery, Whytt's Physiology and Pathology, Ferguson's Natural Philosophy; 1764–1765, Cullen's Chemistry II, Monro's Anatomy and Surgery II, Whytt's Theory of Medicine II, Rutherford's Practice of Medicine, Hope's Materia Medica, Clinical Lectures. M.D., 1765. "De Chlorosi."

James Taylor. Virginia. 1756–1757, Cullen's Chemistry.

John Van Brugh Tennent. New York. 1763–1764. Cullen's Chemistry. M.D., Leyden, 1764. "De Insitione variolorum."

Thomas Tudor Tucker. Bermudas. (Though he was from the West Indies, Tucker practiced at Charleston, S. C., on his return from Edinburgh, and for this reason his name is added here.) 1765–1766, Cullen's Chemistry, Monro's Anatomy and Surgery, Russell's Natural Philosophy; 1766–1767, Monro's Anatomy and Surgery II, Black's Chemistry, Hope's Botany and Pharmacy, Hope's Materia Medica, Cullen's Theory of Medicine; 1767–1768, Monro's Anatomy and Surgery III, Black's Chemistry II, Young's Midwifery, Ferguson's Moral Philosophy; 1769–1770, Black's Chemistry III, Hope's Materia Medica II, Cullen's Theory of Medicine II, Gregory's Practice of Medicine, Clinical Lectures. Medical Society, December 5, 1767. M.D., 1770. "De Frigoris viribus."

Hugh Williamson. Philadelphia. 1764–1765, Cullen's Chemistry, Monro's Anatomy and Surgery, Whytt's Theory of Medicine, Hope's Materia Medica. M.D., Utrecht, 1766.

WALTER MINTO AND THE EARL OF BUCHAN

LUTHER P. EISENHART

Professor Emeritus of Mathematics, Princeton University

(*Read April 20, 1950*)

DR. WALTER MINTO was Born in a Village near Cowdenknows in the County of Merse Scotland Dec 6. 1753—His forefathers were Spaniards—Three brothers adventurers left thire Native country after the Crusades—one of which settled in Glostershire in England another in the Merse & a third from whom I am descended by force of Aims made himself Master of an Extensive track of land in Ethie forest & was distinguished by the name of John of the East—his ancestor however being near the borders of England & their being continual bickerings between the English & the Scots lost his Estate by the same means he acquired it—and long after his descendants lived as Tenants of Lindeen which was supposed to have been the place of the above mentioned Spaniards residence—This village lis 2 or 3 miles to the east of Selkirk This story may seem doubtfull but their is a peice of Land in the neighbourhood of Selkirk which belongs to My fathers Cosin who has in his custody papers that clearly prove him to be the 14th of the name of John Minto who has possesed it—

This statement in Minto's handwriting is in the Princeton University Library.

In the *Princeton Magazine*, volume 1, 1850, there is an article, "Walter Minto LL.D., Late Professor of Mathematics and Natural Philosophy in the College of New Jersey," written probably by the editor of the magazine, William Cowper Alexander. From it we learn that Minto at the age of fifteen attended lectures at the University of Edinburgh, enjoying the instruction of Hume, Ferguson, Robertson, and Blair. Later he turned his attention to theology "in compliance with the wishes of a pious father rather than from his own unbiased choice." During this period he was a frequent contributor to the *Gentleman and Lady's Magazine* of Edinburgh, establishing a reputation as a poet and a humorist.

Because of his literary and classical interests, Minto had a strong desire to visit the continent and particularly Italy. Just as he and a friend were about to go as pilgrims relying on the charity of the pious, Hume sent for him and offered him the opportunity of being the traveling tutor of two sons of the Honorable George Johnstone, formerly Governor of West Florida and a member of the British Parliament. Minto entered upon this charge in 1776, at the age of twenty-three, and sailed for Italy. He and the two boys went to Pisa where they resided with the family of Dr. Joseph Slop, Professor of Astronomy in the University. Under the direction of Dr. Slop, Minto pursued a study of mathematics and thus began his life-long career as a mathematician, not unlike others of his profession who earlier were students of literature and the arts. In the Princeton University Library is Minto's account book of expenditures for the boys from 30 May 1776 to 20 February 1779 and on each page are the signatures of John and George in confirmation. This precaution may have been due to Minto's Scottish experiences or to a requirement by Mr. Johnstone, who in 1778 went to America as one of the Royal Commissioners as bearers of the conciliatory bills and agents to bring about a friendly relation between the mother country and the colonies; in this connection Johnstone gained notoriety by an unsuccessful attempt to bribe General Joseph Reed, a member of Congress from Pennsylvania.

Minto returned to Scotland, and the boys separately from Spain to London, early in 1779. Shortly thereafter he became Professor of Mathematics in the University of Edinburgh.

William Herschel, a native of Hanover, Germany, residing in England, a musician by profession, whose avocation was the making of small telescopes and viewing the heavens, discovered at Bath, on March 13, 1781, a planet moving outside the orbit of Saturn, and named it *Georgium Sidus* in honor of the king. For the discovery he was awarded the Copley Medal of the Royal Society, elected a Fellow, and the next year accepted the offer of George III to give up music and become the king's private astronomer. The news of the discovery spread like wildfire, the astronomers of the continent observed the planet, and suggested other names, in France, Herschel; in Germany, Uranus, the name subsequently adopted. Mas-

FIG. 1. Walter Minto. Artist unknown. Fine Hall, Princeton University.

kelyne, the Astronomer Royal, observed the planet May 28, and in August Slop made eight observations. He communicated these results to Minto, and both of them developed the mathematics of the orbit.

In 1783 C. Dilly in London printed the following small volume: *Researches into some Parts of the Theory of the Planets in which is Solved the Problem, To determine the circular Orbit of a Planet by Two Observations; exemplified in the New Planet, By Walter Minto.* The book is dedicated to Joseph Slop de Cadenberg. In the preface, when commenting upon the name of the new planet, the author remarks:

> Had Mr Herschel or Mr Slop given it the name of some of the ancient heathen deities, it would have been, without hesitation, universally adopted. Among the number, *Minerva*, without all doubt, deserved the pre-eminence. The planet Venus has very properly obtained that name from its beauty and brilliancy; and the planet Mars has been so called from its red colour. The New Planet, being a telescopic star, may be said to denote the modesty of the Goddess of Wisdom.

Sections 1, 2, 3, 6, and 7 of the volume are mathematical; 4 deals with the problem cited on the title page; 5 contains a list of observations made by Herschel, Slop, Maskelyne, and others.

The copy of this book in our Library was presented by the author. There are two copies in the Princeton University Library. On the back of the title page of one of them is the inscription, "To his Excellency Benjamin Franklin LL.D. in Testimony of Esteem & Veneration. From the Author." Below it, in his handwriting, is a list of elements of the orbit of the New Planet determined in March 1784 (from observations anterior to April 1783) by W. M. On the back of the fly-leaf is written:

> This work of the Illustrious predecessor of Dr McLean is presented to him, as a mark of esteem and respect by
>
> N. G. Dufief, proprietor
> of Dr. B. Franklin's Library.[1]

Among the books from George Washington's library in the Boston Athenaeum there is a copy of this book sent to Washington. There accompanied it the following letter written under date of 24 August 1787 from Erasmus Hall near New York where Minto was before going to Princeton.[2]

> Sir, the Reverend Dr. Mason my friend will present to you a small tract on the theory of the Planet. Its chief merit consists in the discovery of mathematical truths—that the circular orbit of a Planet may be determined by two observations only—which have not been tho't of before. I beg you will do me the favor of receiving it as a small testimony of the esteem & veneration I have for the man who has done so much for the rights & happiness of humankind. I have the honor to be, Sir, your most humble servant,
>
> Walter Minto.

David Steuart Erskine, eleventh Earl of Buchan (1742–1829), received his early education from his mother who had studied mathematics under Colin Maclaurin (1698–1746), who in 1742 derived the series used today by students of the calculus, and partly from a private tutor, after which he attended the University of Glasgow. His special interest lay in the study of history and antiquities of his native country, and he organized the Society of Antiquaries of Scotland in 1780. He was a frequent contributor to the *Gentleman's Magazine* of London. He was a man of eccentric vanity, claiming the nearest kinship with persons of distinction to whom he was remotely, if at all, related. Thomas Browne, author of the *Religio Medici*, a remote progenitor, he named his grandfather. In an address, February 22, 1811, he said "I have now concluded all I have to communicate to you at present on the subject of the illustrious and excellent Washington in whom I glory as my cousin and my friend."[3]

[1] This copy was presented to the College Library in 1874 by the son of Dr. Maclean, the Rev. John Maclean, tenth President of the College, 1854–1866.

[2] Quoted from Boston Athenaeum Washington Collection, 1897, p. 143. Here it is stated that the original of the letter is in the State Department in Washington.

[3] The Earl of Buchan's Address to the Americans at Edinburgh on Washington's Birth-Day, February 22d, 1811. The address includes a letter from Lord Buchan to Washington under date of June 28, 1791, which was "enclosed in a box made of the oak that sheltered our great Sir William Wallace after the battle of Falkirk." The letter closes as follows: "Into your Excellency's hands I commit it, requesting you to transmit it, on the event of your decease, to the man in your own country who shall appear, to your judgement, to deserve it best, upon the same considerations that have induced me to send it to your Excellency." The oration includes a letter from Washington to Buchan from Philadelphia, May 1, 1792, accepting the box and closing as follows: "In an attempt to execute your wish in this particular, I should feel embarrassment from a great comparison of relative pretensions and should fear to risk injustice of so marked a preference." Lord Buchan did not report that Washington directed that the box be returned to Buchan, who

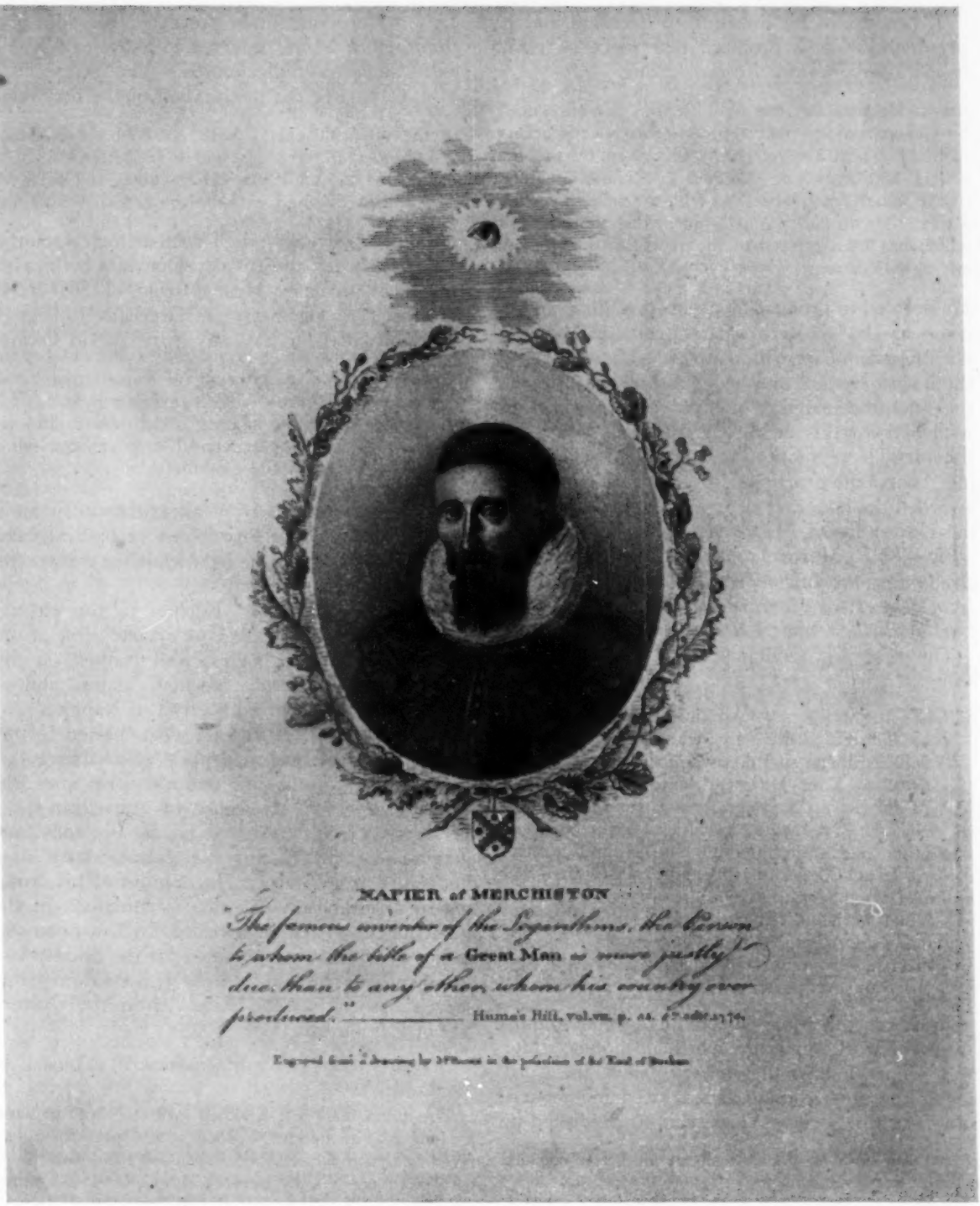

NAPIER of MERCHISTON
"The famous inventor of the Logarithms, the person
to whom the title of a Great Man is more justly
due than to any other whom his country ever
produced."
Hume's Hist. vol. vii. p. 61. 8vo. edit. 1754.

FIG. 2. Frontispiece of *An Account of the Life, Writings, and Inventions of John Napier, of Merchiston; By David Stewart, Earl of Buchan, and Walter Minto, L.L.D.*

A product of his devotion to Scotland and his personality was a proposal that there be established a *Biographica Scotia,* stating

> that if the separate lives of illustrious persons, should be written on the plan I propose, and were accompanied by portraits, elegantly engraven by the best artists, and the whole executed in a similar manner, of the same Quarto size, and with the same Type and Paper, they would gradually form the noblest work, which has been offered to the republic of letters, in any age or country.

He decided to produce a specimen of his plan and chose as the subject John Napier (1550–1617), the inventor of logarithms. He planned to write the biography, and not being competent to handle the scientific material involved associated Minto with him for this task. By this time Minto had considerable reputation as a mathematician, having contributed articles to journals and been awarded the honorary degree of doctor of laws by the University of Aberdeen.

In 1787 R. Morison, Junr. of Perth printed *An Account of the Life, Writings, and Inventions of John Napier, of Merchiston; By David Stewart, Earl of Buchan, and Walter Minto, L.L.D.*

The first page contains the dedication to the King:

> SIR, AS the writings of Archimedes were addressed to the King of Sicily, who had perused and relished them, so I do myself the honour, to address to Your Majesty, the following account of the Life, Writings, and Inventions of our British Archimedes, in which, I can claim no other merit, than having endeavoured to call forth and illustrate the abilities of others. I feel great pleasure, in dedicating this Tract to Your Majesty, after the chaste and dignified model of Antiquity, bestowing on the King, the merited encomium, of having promoted the Sciences and Arts, with which it is connected; . . .

The next three pages contain a bibliography largely of works in Latin which no doubt Minto used. Then follows the *Advertisement,* the word having the same connotation as used in the first volume of the Society's *Transactions* published in 1771. Here one finds presented the idea of a *Biographica Scotia* referred to above which ends with the paragraph quoted. The reference to Minto's part in the preparation of the text reads,

> In the scientific part I have received the assistance of a gentleman, who deserves to be better known, on account of his mathematical learning, and the accuracy with which he treats the subjects of his inquiry.

The book provides a well documented account of Napier's theory and the developments by him and others, particularly Henry Briggs (1561–1634), Professor of Geometry at Gresham College in London, and later Savilian Professor in Oxford.

> However ingenious and beautiful Napier's manner of delivering the theory of the logarithms is, it must be acknowledged that it labours under one capital impropriety—treating geometrically a subject which properly belongs only to arithmetic.

Briggs considered it from an arithmetic point of view, calculated the logarithms of natural numbers to base 10, and the logarithms so constructed bear his name to this day.

As desired by Lord Buchan in the passage quoted earlier, the book is of quarto size, of one hundred and thirty pages, well printed on fine paper, with five well executed plates, and as frontispiece an engraved portrait of Napier.

There is no record at what period Minto thought of America as a place of residence. A young man of liberal political principles, he warmly espoused the cause of American Independence. It is likely that he did not form any definite plan of crossing the Atlantic until after his return from Italy. The account of his crossing and settling in America is contained in the following three letters to Lord Buchan photostat copies of which were obtained for the Society last summer by Whitfield J. Bell, Jr., a Library Research Associate of the Society, from the University of Edinburgh.

Greenock 1st June 1786

My Lord

The day after I left Kirkhill (which I kept in view as long as the hedges & road would permit) I arrived in Glasgow. I found Professor Robinson there, who gave me a very genteel letter for Dr. Logan. An old school fellow introduced me to the Messrs. Wilson. The Doctor seems to be going the way of all living. Patrick seems to be an excellent philosopher & is one of the friendliest men I have met with. He put into my hands a letter for Franklin & one for Dr. Ewing president of Philadelphia college. They

in 1803 sent it to Benjamin Rush for his heroic conduct in the yellow fever epidemic.

Copies of the two letters of Washington in the address are printed in *The writings of George Washington from the original transcript sources, 1745–1799,* John C. Fitzpatrick, ed., 32, Washington, U. S. Govt. Print. Off., 1939. The copy of this Address in the Princeton University Library had been presented by Lord Buchan to the Subscription Library of Edinburgh.

are conceived in terms of great warmth & more to my honor than I deserve. I waited on Gilbert Hamilton who very obligingly offered to procure me letters for Philadelphia. He was in the country when I left Glasgow, so that I did not get them. Dr. Anderson obliged me in shewing me the apparatus of his class, which is a very good one, & his grimcracks as he calls them, some of which are very ingenious. As I had opportunity of hearing daily about the Alexander, I did not leave Glasgow till monday last; on which day I came to this place after seeing Lochlomond. I have been twice at Port Glasgow. Capt. Henry of the Flora had sent off your parcel by the Glasgow carrier on friday 26th May. Miss Ballantyne seemed sensible of the honor done her by Lady Buchan's card & very obligingly exhibited her own & her father's services. She seems not to be happy, & told me she would make bold to acquaint her Ladyship with some of the particulars of her situation. My passage, stores & freight for more than one half of my baggage which ways 700 weight nearly, will amount to about 20 guineas. There are to be only 7 or 8 of us in the cabin; for which I am very thankful. Two of our messmates are females, both young; the one unmarried, going out to a lover I suppose, & the other a widow, a native I believe of America. I have written to my brother agreeably to your orders. Capt. Ritchie (?) speaks of sailing in two days but I believe it may be monday before that take place I beg my most respectful compliments to my Lady Buchan & to Miss *Kennedy* Fraser & to Mr S. Stewart.

Adieu. If (?) my wishes & the will of Providence coincide the amiable inhabitants of Kirkhill will never have cause to heave a sigh.

Rt. Honble.
The Earl of Buchan
Edinburgh

End: Dr. Minto to the Earl of Buchan June 1. 1786. quoted in my Sketch of his life

Philadelphia 11th Septr 1786

My Lord

After a passage of 50 days I arrived here on the 1st of August I never spent so many days without study & with greater pleasure in my life; owing entirely to the charms I found in the conversation of a young lady from Banffshire (?) who is about to be married to a worthy young clergyman settled in the neighbourhood of Pitt'sburg about 320 miles from Philadelphia.

I have had several good offers of a settlement since my arrival here. I have no thoughts of accepting that from Princeton. The trustees of the college of New York have had me in their eye for some time as president of that Institution: As I wish to live in quiet & as nature has not formed me to be a man pleaser, I have no intention of having any thing to do with it. What suits my inclination best is the proposal made me by the president of Washington college in Maryland to fill the mathematical chair in that college. The salary is paid by government & is fixed by law at [–]00 pounds currency equal to 180 pounds sterling. The affair is not yet settled respecting me but I have no reason to think that it will fail.

I have found no letters here from my brother in Jamaica, which gives me pain. I hope he will not fail in transmitting the £50 by the time the bill your Lordship allowed me to draw upon you becomes due. If any unforseen circumstance should prevent him from fulfilling his promise, I hope I shall soon have it in my power to remit that sum myself.

I have been well received by all the people that I was recommended to here, particularly by the venerable Franklin & by Dr. Rush. I am much indebted to your Lordship & to Dr. Erskine to whom I beg my respectful compliments. General Reed is dead. I intend to deliver your letter to Mr. Chase when I go to Maryland.

I have been here too short a space of time to be a judge of the affairs of this country. I shall only say this that I have not here felt the disagreeable sensation of being from home.

I should be glad to hear of the fate of my two papers which you did me the honor to present to the Astronomer Royal for the Royal Society. I feel myself interested also for the fate of *our* Lord Napier.

I hope my Lady Buchan is well & in good spirits. Please offer my most respectful compliments to her & Miss Kennedy Fraser. I beg you will remember me affectionately to Mr. S. Stewart.

Nesbet (?) I hear is well at Carlisle & great [mutilated] by the students & by the people in that place. They re-elected him to be president & continue him the same salary that was promised him at first.

General Greene is dead. He is reputed next to Washington to have been the best officer in this country. I hope soon to have the honor of a long letter from your Lordship. You might direct your letter to the post office here. I am My Lord

yr. Lordsps. much obliged & most
obt. hble. Servt.
Walter Minto

Rt. Honorable
the Earl of Buchan
Edinburgh

New York 28th. Octr. 1787.

My Lord

Your letter of december with two parcels containing prints & a copy of Napier's Life I received only about a month ago at Philadelphia. The prints are disposed of according to your desire. I have not yet had leisure to give Napier an attentive perusal; but in the glance I gave it, I discovered a great many typographical errors. These I shall mark down at my leisure which might be printed & distributed

among the possessors of the book. I take it for granted that you have already sent copies of our work to the eminent men & societies in different parts of Europe. Among the first of these I hope my friend Slop has not been forgotten. If it is not asking too much, I beg you would send me a hundred copies, some of which might be sold & the rest distributed among the literary societies & distinguished men in this country in your name or in mine or in both as you think proper.

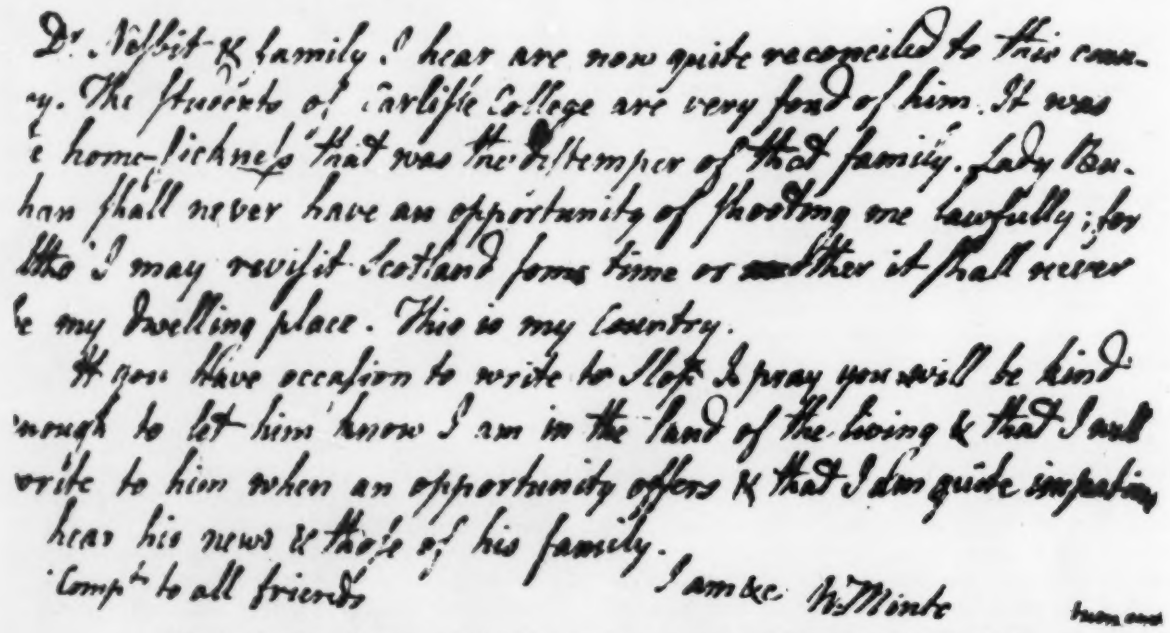
I think the astronomers of London a very odd sort of people. What can they mean by keeping one's papers for three years & a half? I shall be tempted to think that they are of more value than I was aware of. I beg you will not desist (?) till you get them out of their clutches if they are not actually in the press. I leave it to you to take the trouble of sending them to Berlin or to me. I believe that that Academy or our American Philosophical Society at Philadelphia will receive them thankfully.

I never received S. Stewart's letter. I am glad he is employed. I hope he will get an appointment. I am sure he deserves a good one. I shall write to him by & by. I am very glad my Uncle has sent the £50. I will not fail to thank him. I beg leave to repeat my warmest acknowledgements to you for your generosity in this affair.

About six weeks ago I wrote you a few lines with my friend Major Chrystie who returns hither in the spring. He will willingly take charge of any of your commands for me.

This Institution (Erasmus-Hall) does not increase so fast as was expected. Its funds arise entirely from the tuition money which does little more than pay the teachers so that I have been living these six months past almost wholly on hope. Sometime ago the trustees of New Jersey College unanimously elected me professor of Mathematics & Natural Philosophy in that seminary. They used to give only £150 to the proffesors of those branches. They offer me £50 more & promise to add another £100 as soon as their funds which are increasing will permit. They offer also lodging & board in the college which is worth £40 or £50. I may also have a chance of making £200 more if I chuse to teach a private class. The fatigue of teaching is not greater than in the European Universities. These circumstances with the advice & earnest sollicitations of all my friends here have determined me to settle at Princeton in the course of a month or two. Old Witherspoon who is a very friendly man has begged me to do them the honor & the favor to come & they promise themselves a large increase of students from my being there.

Mr. Bond whom I saw lately in Philadelphia told me he had sent you a copy of our new Constitution. Pray how is it relished with you? There is great probability of its being adopted without bloodshed. Will not this be a singular thing in the history of mankind? There are three or four things in it that I do not like. Of these there is one which *must* be thrown out. What I refer to is the interference of Congress in the election of the representatives. What did the convention mean by establishing that the congress should *make* & alter such regulations respecting the manner, times & places of electing representatives as the State legislatures should *make*. There is a bull in it as well as tyranny. I hope it is a blunder of their secretary.



Dr. Nesbit & family I hear are now quite reconciled to this country. The students of Carlisle College are very fond of him. It was a home-sickness that was the distemper of that family. Lady Buchan shall never have an opportunity of shooting me lawfully; for tho' I may revisit Scotland some time or another it shall never be my dwelling place. This is my country.

If you have occasion to write to Slop I pray you will be kind enough to let him know I am in the land of the living & that I will write to him when an opportunity offers & that I am quite impatient to hear his news & those of his family.

Compt to all friends I am &c. W. Minto

Fig. 3. Portion of letter from Walter Minto to the Earl of Buchan, October 28, 1787.

I hear your Royal Society at Edinburgh has published a volume of Memoirs. I should be glad to see a copy of them. I hope your Antiquarians are not idle.

While at Albany during last winter, I saw a Mr. Kirkland who preaches to the Oneida Indians. I asked him about their astronomy. He assured me among other things that their names for the constellations called the Great & Small Bears were of the same signification with ours. Is not this a strong proof that the natives of America came from the Eastern Continent & that we are all children of the same family?

I have not yet had any opportunity of collecting [mutilated] trees & shrubs for you & Lady Buchan to ornament Dryburgh (?) with: but I hope to do it by next fall.

Dr. Nesbit & family I hear are now quite reconciled to this country. The Students of Carlisle College are very fond of him. It was the *home-sickness* that was the distemper of that family. Lady Buchan shall never have an opportunity of shooting me lawfully; for altho' I may revisit Scotland some time or other it shall never be my dwelling place. This is my Country.

If you have occasion to write to Slop I pray you will be kind enough to let him know I am in the land of the living & that I will write to him when an opportunity offers & that I am quite impatient to hear his news & those of his family.

Compts. to all friends.

I am &c.
W. Minto.

turn over.

I beg you will do me the favor of sending in my name a copy of Napier's life to Miss Drummond of Logi Almond by the Perth Carrier. He puts up at the cellar immediately above Peebles's Wynd. I send you a few pamphlets by Mr. Robertson among which is our new common prayer book for the lady above named to whom I beg you will transmit it. She would I dare say be glad of a reading of said pamphlets too. I shall take the liberty of introducing Mr. Robertson to you on another piece of paper. He is a very worthy young gentleman which is a sufficient recommendation to your lordship. My best respects wait on lady Buchan & Miss K. Fraser. I have been unfortunate in not getting any of your letters in this country till several months after date. Please remember me to Dr. Erskine & Mr. S. Stewart. I hope Napier's life sells well.

Right Honorable
The Earl of Buchan
Buchan
Favd by Mr. Robertson

End: Dr. Walter Minto to the E. of Buch
[ ] particulars relative to the names of the Constellations
[ ] the W. (?) Americans

The election of Dr. Minto which he accepted was to a chair established for him by the following resolution of the board of trustees under date of September 26, 1787 [4]:

The board considering the importance to the interest & reputation of the institution of perfecting the course of mathematical and philosophical science—Resolved the board establish a Professorship of Mathematics and Natural Philosophy in the faculty of the College & that its appointment at present, till the funds of the College may enable the board to make a more liberal provision, shall be two hundred pounds current money of New Jersey per annum.

The following letter from President Witherspoon of the College of New Jersey to Lord Buchan deals with Minto's first year at the College:

Revd. Dr. Witherspoon Principal of ~~Princeton college~~ New Jersey Coll.

Philadelphia May 24. 1788.

My Lord

I must make an apology that I did not sooner write to your Lordship of our electing Dr Minto Professor of Mathematics in the College of New Jersey knowing the interest you take in his Affairs but I trusted that he himself would inform you & that Dr Erskine would communicate what I wrote to him upon the Subject.

I have now the additional pleasure of informing your Lordship that he has in all respects answered the Character you gave of him & has since his Election given great and general Satisfaction to the Students the other officers of College & even to the Neighbourhood. He applies diligently to his Business & from two quarterly Examinations we have had since his Election his Method of teaching seems to be very good as the Class has in no Instance made a better Appearance. The Neighbourhood have also found in him what was not expected an easy sociability & unsuspecting Confidence of Friendship. This I have heard from many & it was the more remarked that when he came first to Princeton and to New York he was low in Spirits from an Illness contracted in Maryland being reserved and inattentive in Conversation but now all are sensible that he is as amiable in his Manners as accomplished in his Profession so that we look upon him as a great Acquisition to our Seminary & to America.

As your Lordship knows already our young & feeble State in respect of Funds I may the more freely mention that if we could have any Assistance from the learned and Liberal it would be very acceptable. Dr Minto is anxious to get a philosophical Apparatus which as soon as we can procure we will build him an Observatory. We had a very fine Apparatus

[4] Minutes of the Board of Trustees.

before the War but except Rittenhouse's Orrery the whole was carried off or destroyed. Since that Time Mr Benjamin Vaughan of London presented us with a new patent electrical Apparatus which seems to be very good of its Kind & which with the Orrery is the whole of our present Stock.

I mentioned to Dr Erskine my Intention of applying to the many Scot Authors now in Life with the greatest part of whom I was personally acquainted in early Life begging that they would present our College Library with their Works this would be a great Addition to our Stock & is the more needed that Several of them which we had bought before the War were carried off so that except what is in my own Libra-y I do not recollect that we have any of them at all. Several of the english Authors have sent us the Works they were the Authors of or concerned in as Dr Kippis Granville Sharp & some others.

I am somewhat at a Loss how to manage this Application. To write a particular Letter to each if written with the fulness that would be proper would take a very long Time if any were omitted it might give offence & to write one general Circular Letter would be far less respectable as well as be liable to Several other Objections. Therefore I believe I must content my self with writing to a few particular Friends and requesting them to be my Agents in the Matter. By a Letter just received from Dr Erskine I find he has communicated this Decision to Your Lordship and that you have been so kind as to offer to apply to some that I have not named I will therefore take the Liberty of regarding your Lordships good Offices in this Matter in Concurrence with Dr Erskine not only in Edin[burgh] but elsewhere.

There is no News here at present but with respect to our new Federal Constitution which I believe will be finally established in the Course of this Summer. To a Scholar & Philosopher it may be more worth while to observe I have the Rapidity with which this immense extent of Territory to the westward fills is most astonishing. To know or be informed of the Numbers that migrate would make a Man suppose that the former settlements must be laid waste. Yet it is not so. There is no place with which I am acquainted in which they are not building new Houses. Princeton is very nearly double to what it was in 1776 & it is much more than double to what it was when I came here 1768. This is far from being all owing to an influx from Europe though to be sure that has some Effect but the Increase of Mankind when the far greatest part of them live a simple country Life is easily greater than has been generally Supposed. The Principles of Dr Wallaces book on the Numbers of Mankind are clearly illustrated & fully confirmed by the present & past State of America.

There is another Subject that I wish I had Time to enlarge upon. The Mistakes and Misapprehensions of europeans concerning America are innumerable and incurable. There are many Classes of Ideas sentiments habits and practices which arise from the Newness of the Country which europeans either cannot understand or will not believe. It would make anybody smile to see the nonsense that is written by Abbe Raynal & many others on the Subject of America & cause those who come here commit the greatest Blunders & mistake what they see by having their old Country habits & Ideas upon them in full force of which the Marquis de Chatelets Travels are the most convincing Proof. Perhaps I may hereafter try to illustrate this at greater Length. In the mean time with respectful Compliment's to Lady Buchan I beg leave to Subscribe myself your Lordships

Right Honble The
Earl of Buchan

most obed & humble Sevt
Jno Witherspoon

At the annual commencement September 24, 1788, he delivered "An inaugural Oration on the Progress and Importance of the Mathematical Sciences," which was printed by Isaac Collins, Trenton, 1788, a copy of which is in the Society's Library. For the first half of the well printed pamphlet of fifty-one pages he presents "a few general remarks on the Origin, Progress and chief Promoters of the Mathematical Sciences." In the second half he develops the thesis "The mathematical sciences, independently of . . . any particular purpose, are of the utmost consequence to the student." I quote a few statements:

> . . . there is no occupation so well adapted as the study of this science, to brighten and enlarge that reasoning power which forms the most distinguishing feature of man. . . .
>
> But the mathematics tend to form the morals, as well as to improve the intellectual faculties of youth. . . . It inspires us with a sense of order, of regularity and of dignity. . . . It enables us to bridle the sallies of imagination, to moderate our passions and our temper, and to estimate things according to their intrinsic value.

By citing the examples of Leibnitz, Descartes, and Newton, "a man without an equal in the history of human genius," he sought to prove that the Abbé des Fontaines was mistaken in thinking that "the study of the mathematics [was] rather beneath the dignity of a man of genius, and he was wont to say that to be a great mathematician no more was requisite than to be very diligent, and to live very long."

His oration closes as follows:

To the Students.

Young Gentlemen, What I have said respecting the cultivators and the importance of the mathematical sciences, I hope will make such an impression on your minds, as will induce you to apply to them with unremitting ardor. The circumstances and situation of this country should serve as an additional motive to application. In the European countries the customs and manners of the people are in a great measure settled by long and inveterate habit. In this country they are in a very fluctuating state. In the former the influence of particular pursuits in learning is imperceptible, and slow in its operation. In the latter it is rapid and very discernible. It is therefore of the last importance that you should improve your minds to the greatest advantage; and of all the branches of human science, there is none better adapted to accomplish this end than what I recommend to you.

Mathematical knowledge is generally supposed to be acquired with difficulty. I can assure you, however, that the difficulty arises rather from want of attention than from want of sagacity in those who make the attempt. With a firm resolution and a persevering diligence, you cannot fail of success. Without them, the greatest genius would be of no avail.

It gives me a great deal of pleasure, Gentlemen, to have occasion to observe, in this public manner, that a considerable majority of those of you who have studied the mathematics under my direction, have acquitted themselves even better than my expectations, which, believe me, were very sanguine. And I hope this testimony of approvation will prove another inducement to your future exertions. I beg that you, gentlemen, who are about to receive the honors of college, and to enter into the world, will by no means imagine that you have yet acquired a sufficient knowledge of this or of any other subject of your studies; for a College Education is intended rather to sketch out the plan, and to lay the foundation, than to complete the fabric of the liberal arts and sciences. And I conjure all of you to remember that, whatever be the talents which the Father of mankind has bestowed upon you, and however much you may improve those talents, it should be the chief and invariable study of your lives to employ them in doing good to your fellow-creatures; for, of all the curses that can befal humanity, that of the misapplication of genius is the greatest, and the most pernicious to the individual and to society.

To the Trustees.

Mr. President and Gentlemen of the honorable Corporation of Trustees, It is with the deepest sense of gratitude that I return you thanks for your unanimous appointment of me to the Professorship of Mathematics and Natural Philosophy. As I consider the Duties of my station, and the happiness of my life to be inseparably connected, I trust you are firmly convinced that no exertions on my side, shall be wanting to justify your choice, and to merit your approbation. I feel a very high degree of satisfaction in being a member of a Faculty, whose names will be for-ever dear to the wellwishers to the cause of learning and of the liberties of mankind, and in having it in my power to unite with them in giving the tone to the turn of thinking of the future legislators of America. It is your province, Gentlemen, to co-operate with us in this important business, by replacing such parts of the philosophical apparatus as we were deprived of by the incidents of the war, which was prosecuted by our enemies in the true spirit of the Goths and Vandals.

Then follows a prayer which reveals his faith in America:

Address to the Supreme Being.

Father of truth and reason and of every thing that lives! Be pleased to prosper the interests of science and literature in the United States of America: to make those interests ever subservient to the promotion of liberty, happiness and virtue: to preserve this rising and extensive empire from the ill-boding spirit of conquest: to protect this country as a secure and happy asylum to the oppressed in all quarters of the globe: to enlighten the inhabitants of the eastern hemisphere in the knowledge of the rights of mankind, and in the arts of government and peace: to cause truth and reason at length to obtain a glorious and everlasting victory over error and violence; and to instruct all the nations of the world in the way of uprightness and felicity. Amen.

The trustees of the College at a meeting immediately following these commencement exercises voted to accept with thanks the proposal of Minto to relinquish five pounds of his salary for the purpose of providing a medal to be adjudged by the trustees and faculty of the College, to the person who at the annual commencement shall deliver the best dissertation on either of the following subjects:

1. The unlawfulness & impolicy of capital punishment & the best method of reforming criminals & making them useful to society.
2. The unlawfulness & impolicy of African slavery & the best means of abolishing it in the United States & promoting the happiness of free negroes.

The following letter[5] bears on Minto's election to the American Philosophical Society:

[5] Archives Amer. Philos. Soc.

Princeton 19th Feb. 1789

Gentlemen

Permit me to offer you my Sincere thanks for the polite & obliging letter which accompanied the certificate of my being elected a Member of the American Philosophical Society.

I beg you will do me the favor, Gentlemen, of expressing to that respectable Body the grateful sense I entertain of the honor they have been pleased to confer on me. I shall most chearfully endeavor to contribute my mite for promoting the valuable purposes of the institution.

I have the honor to be

Gentlemen

Your most obt. & most hble Servt.

Walter Minto.

J. Hutchinson & J. Vaughan Esqrs.
Secretaries of the Amer. Phil. Soc.

He had previously sent the following letter [5] to the Society:

Sir

A portrait print of Napier the inventor of the logarithms & a small tract on the theory of the planets accompany this.

I beg you will do me the honor of presenting the former in the name of the Earl of Buchan & the latter in my name, to the American Philosophical Society.

I have the Honor to be

Your Excellency's

Most obt. & most humble Servt.

Philadelphia
3d Octr 1787

Walter Minto

His Excy. The President of the
American Philosophical Society

Minto was Treasurer of the College. In the Princeton University Library there are receipts with his signature of payments for "tuition and commons" of students.

On September 29, 1790, two years after Minto had made the suggestion in his inaugural oration, the Board of Trustees adopted the following resolution: [4]

WHEREAS, a proper Apparatus is absolutely necessary for the successful cultivation of, and instruction in, several parts of natural philosophy; and whereas most of the instruments which formerly belonged to this Seminary were either destroyed or carried off during the war,

Resolved, That this Board use their utmost endeavours to procure, by subscription, such a sum of money as shall be adequate to supply the deficiency:

And

Ordered, That the above resolution be printed and copies thereof distributed among the friends of the College, who shall be requested by some member of the Board or of the Faculty, to exert themselves for the purposes above mentioned.

This was printed and sent to prospective donors by trustees and members of the faculty. The copy in the Princeton University Library bears Minto's signature.

In February 1885 Mr. Henry Phillips, Jr., Secretary and Librarian of the American Philosophical Society, discovered among the mass of material in the Society's Hall a small box containing the following letter from the Earl of Buchan, who had been elected a Foreign Member of the Society in 1794, to David Rittenhouse:

Dryburgh Abbey, January 12th. 1795.

Sir,

My worthy friend Mr. John Millar son of the eminent Professor John Millar of Glasgow Whom I recommend to your attention has charged himself with this letter and will deliver to you a writing box which I dedicate to your use as President of the Philosophical Society at Philadelphia & to your Successors in Office as a Testimony of my high esteem for your Literary Character and for that of the Society over which you preside.

This Box is made of Yew, of Black Cherry Tree Acacia, and Berberry and veneerd with Holly all of the growth of my Garden at this place and joined, fitted & finished by my own Joiner in this House.

On the Lid is an authentic picture of Copernicus, and in the inside thereof is a similar one of Napier. That of Copernicus is from the accurate copy of the Chancellor Husarzewski's original Picture wch. was sent by the learned Dr. Wolf of Dantzic to the Royal Society of London & this limning of mine is most faithfully delineated & shaded from a drawing made by Mr. Thomas Parke of Piccadilly formerly a Pupil of Valentine Green Engraver at London from the Picture in the Royal Society on a Scale proportional in all parts and with great fidelity, so that I can assure you of my limning being a fac simile as to the features & countenance.

That of Napier is indeed a most exquisitely beautiful piece by John Brown of Edr. executed with the black lead Pencil from an original Portrait in the possession of Lord Napier; & as a drawing with black Lead excells I believe every thing of the kind now extant, Mr. Brown having by drawing during Twelve Years in Italy from Statues obtained a super-eminent accuracy & Beauty of Design. I consecrate this interesting piece of Furniture to American Science & to the Philosophical Society of Philadelphia, willing

however that in consideration of the high Esteem I bear to you Personally you should have the custody & use of it, in your own House during your Life, producing it only to the Society for the use of the Secretary when you think proper. I have subjoined by way of Postscript to this letter some particulars relating to the residence of Copernicus & his Tomb which I wish you to communicate to *our* Society. Permit me to repeat my earnest request that you should be *kind and attentive to the Bearer* [*& his Family,*] who I hope will have the happiness to obtain a Literary Establishment in the United States & prove of much Utility to the Publick.

I am Sir,
with Esteem,
Yr. Obliged humble Servt.
Buchan.

P.S. Concerning the Residence & Tomb of Copernicus &c "In the year 1777 my learned friend John Bernoulli[6] of Berlin on one of his Tours having happened to meet with the Bishop of Warmia in the Abbey of Oliva near Dantzic, was informed by that Prelate that he had had the pleasure to discover in the Cathedral of Frauenburg the Tomb of Copernicus so long fruitlessly sought for.

In the year 1778 Mr. Bernoulli having occasion to pass through Frauenburg on his road to St. Petersburg, did not fail to visit the Cathedral and explore the Monument of Copernicus.

Acquainted with no one in the place he was yet lucky enough to meet with a Canon in the Street whose Countenance invited him to accost him on this Subject and who proved very attentive to his researches. He informed him that as for the ashes of Copernicus they were mingled in the Charnel house with the bones of the Fraternity in a Vault dedicated to the Sepulture of the Canons but that for the Tomb Stone of the Philosopher it was no more than a Tablet of Marble, simple as the mode was of his days & had no other Inscription than these words . NIC. COPER–NICUS THOR .

That this Tablet had remained hidden for some time in rubbish and when recovered was placed in the Chapter-house till a more suitable place should be destined for it.

Mr. Bernoulli expresses his regret to me that he had not urged the Canon to indulge him with a sight of this Stone & to look for a farther Inscription to support the assertion of Gassendi who mentions p. 325 "That the BP. Martin Cromer an eminent Polish Historian caused a mural marble Monument to be inscribed and erected to the memory of Copernicus with the following Inscription

D. O. M.
R. D. Nicolao Copernico
Torun[n]ensi, Artium, et
Medicinæ Doctori.
Canonico Warmiensi,
Præstanti astrologo, et
ejus disciplinæ
Instauratori,
Martinus Cromerus
Episcopus Warmiensis,
honoris, et ad posteritatem
Memoriæ causa posuit.
M.D. LXXXI. *

* Gassendi adds that this monument was not erected until 36. years after the death of Copernicus which does not agree with this date 1581.

The good Canon informed Bernoulli that he was lodged in the apartment of Copernicus of which he was very proud and invited the Prussian Philosopher to visit him in that place which he did accordingly & was shewn by the Canon another place above the Dormitories which had been used by Copernicus as his Study & Observatory, in which the Canon had a Portrait of that eminent Man, concerning the originality of which he could not say. This little Observatory has an extensive view. But when Copernicus had occasion for one more extensive he was wont to observe on the Gallery of the Steeple which communicates with this place.

Charmed with these Classic footsteps Bernoulli forgot to look at the Monument in the Chapter house above mentioned.

In a repository adjoining to the Cathedral the Canon showed Bernoulli the remains of a Hydraulic machine said to have been invented & used by Copernicus. The construction seemed interesting but in great dis-repair, & Bernoulli had not leisure to examine it particularly The Use of this Machine was to force & convey water into the most elevated apartments of the House of the Canons who now are under the necessity of having fetched at a distance from the lower Town." "I remember to have seen [says Bernoulli] in some old German Journal that the Library of the ancient Town of Konigsberg contained some books chiefly Mathematical which were part of the library of Copernicus & also his Portrait which had been purchased at Thorn. where the remains of his family still posessed the house in which he was born so late as the year 1720.

In P. Freher's Theatrum virorum erudit there is a Chronostick on the year of Copernicus's death 1543.—p. 1447.

eX hoC eXceſsIt trIstI CopernICVs & Vo IngenIo aſtronVM & CognItIone potens

[6] John Bernoulli (1744–1807) was Astronomer Royal and Director of Mathematical Studies at Berlin. His grandfather, John Bernoulli (1667–1748), and his great uncle, James Bernoulli (1654–1705), are in the Hall of Fame of Mathematicians in recognition of their development of the integral calculus and application to geometry and mechanics.

In the above mentioned book p: 1442 there is a neat little print of Copernicus.
In *Hartknoch alles und newes Preussen* there is a Print of Copernicus from a Picture on wood that hangs in what they call his Cenotaph at Thorn & which represents him kneeling in his Canonicals before a Crucifix & below this Portrait are these Sapphic verses

Non parem Pauli gratiam requiro
Veniam Petri neque posco, sed quam
Tu Crucis ligno dederas latroni Sedulus oro.

a little lower,

Nicolao Copernico Thorunensi absolutae subtilitatis Mathematico, ne tanti viri apud exteros celeb. in sua patria periret memoria, hoc monumentum positum. Mort. Varmiae in suo Canonicatu Anno 1543. die 4.* ætatis LXXIII.

lastly
lowest

Nicolaus Copernicus Thoruniensis [Prussvs,]
Mathematicus Celeberrimus

This Memorial of Copernicus was erected by *Melchior Pyrnessius* M.D. who died 1589. on the same Altar piece or Picture is represented the Portrait of John DAlbret with the following Inscription.—Illustris Princeps [&] Dns. Joh. Albertus Polo. Rex Apoplexia hic Thoru. mortuus Anno 1501 die 17 Junii aetat. 41 cujus viscera hic, Sepulta *corpore Craco. translato.* Reg. Anno VIII

Upon the whole it appears that the likeness I send of Copernicus is most to be depended on, and as such I flatter myself it will be an *Heir Loom to Infant America!*
Concerning Napier it is needless for me to enlarge—the Learned Dr. Minto having enabled me to do Justice to his Memory.

It is recorded that a manuscript of Minto's mathematical works, arranged and prepared by himself for publication, the plates having been engraved ready for the press, when he died in his forty-fourth year. This material, never published, seems to have been lost.

His grave, in a restricted portion of the Princeton Cemetery, at times referred to as the Westminster Abbey of Princeton, is covered with a marble slab with the inscription:

Walter Minto LL.D.
Professor of Mathematics and Philosophy
In the College of New Jersey
Was born
In the County of Merse, in Scotland,
Dec. 6th, 1753
And died in this Town
October 31st, 1796.

MAGNETIC RECORDING OF AMERICAN INDIAN LANGUAGES AND THE RELATIONSHIP OF THIS TO OTHER KINDS OF MEMORY *

C. F. VOEGELIN

Professor of Anthropology, Indiana University

So FAR as having any writing which was in part derivative from one or more of the natural languages, native America could boast of the following: that such writing was restricted to an area dominated by the Maya, the pre-Aztec, and the Aztec cultures in Middle America; and that the subject matter of what was written was highly restricted. Since there is no instance in which a whole utterance has been interpreted, a possibility exists that the Middle American writing was never used to record a whole utterance. Our own method of alphabetic writing, which was borrowed or adopted more extensively than intensively by the Indians, belongs also to this class of phonetic writing, representing some of the sounds of a natural language and therefore, as we say, secondarily derived from a natural language. The less adequate the representation (the writing), the greater the need for the reader to have knowledge (memory) of the natural language being represented.

So far as having communicating devices nonderivative from one or another of their natural languages, American Indians could boast of the following: a highly conventional sign language (quite aside from gestures used while talking), sound and smoke signals, notched sticks (and other ways of marking various materials as signs), knotted strings (quipus), and two kinds of pictographic writing. The most widespread of these, often incised on rocks, may have served as half religious, half communicating devices, but today they can be interpreted neither by anthropologists nor by Indians; a second kind of pictographic writing, found here and there (east of the Rocky Mountains especially), can be freely read, either by Indians alone, or by both Indians and anthropologists. What such writing communicated was directly related to the cultural context of the pictograph; if a certain bit of history was to be recorded, the record would be direct and not detoured through the utterances of a natural language, as happens when we use alphabetic writing to describe, for example, the terrible blizzard of 1888 which covered New York with snow for a few days. To understand the immediately preceding sentence, the reader must first comprehend the conventions of alphabetic writing and then apply this comprehension to his knowledge of a natural language, namely English. If a Plains Indian, say a Blackfoot, were to represent the blizzard in question, he might show streets cluttered with snow, people thin with hunger, and food supplies stalled in the snow some distance from the dwellings; another Plains Indian, say a Crow, knowing the conventions of pictography, could read this directly without detouring the history thus recorded either through his Siouan Crow language or through the Algonquian Blackfoot language.

What was lacking in native America was not cultural equipment for recording history or for communicating—the great lack was a cultural mechanism for representing whole utterances and series of successive whole utterances from a given natural language. For lack of this in many parts of the New World, notably in the Southwest, lengthy prayers and complicated ritual utterances were memorized by rote memory. As Reichard has shown for the Navaho, hundreds of successive utterances may be memorized.[1] But no one person can really be guaranteed to do this perfectly; hence, one's fellow parishioners, so to speak, listen with critical ears, and if they detect a slip in memory on the part of the individual who is supposed to have memorized the prayer—that is, if a listener happens to remember an utterance in the prayer which the speaker leaves out or changes —then everybody is miserable, for the change or omission is supposed to vitiate the good which the prayer would otherwise have affected, or even worse, to bring consequences so ominous that it would have been better not to have prayed at all.

At best, rote memory is not reliable; but this was the only resource American Indians had for

* Research was carried out with the aid of grants from the Penrose Fund and the Phillips Library Fund of the American Philosophical Society.

[1] Reichard, Gladys A., *Prayer: the compulsive word*, N. Y., Augustin, 1944.

remembering whole utterances from natural languages. We turn now to non-aboriginal cultural equipment which serves to remember whole utterances for us.

To the end of the nineteenth century Europeans had only alphabetic writing, secondarily derivative from spoken languages, plus such tertiary derivatives as telegraphic codes, shorthand writing, and deaf and dumb sign language. Alphabetic writing gives directions to a reader somewhat as a musical score gives directions to a musician. Phantasies of having a device which would do more than give such directions—which would play back sounds—are known from the third century B.C. (Heron of Alexandria).

When these phantasies were realized in fact, the engineering development was from earlier machines serving the same function as writing—recording instead of playing back. Almost exactly a hundred years ago Leon Scott presented to the French Academy of Science a description of a horn which had a membrane stretched over one end, with a bristle attached to the membrane, and with a rotating smoked drum brought lightly into contact with the bristle. Sounds presented to the horn vibrated the membrane with its attached bristle, and these vibrations were recorded for later study on the smoked paper wrapped around the drum moving at a constant rate. The application of this machine for recording American Indian languages is to be found in but few publications (for example, on Mohave and on Northern Ute), but no doubt more extensive use of the machine was made in unpublished work. Older anthropologists speak of the time which they devoted to making records with the kymograph, as they call this device, as time wasted. The kymographic record seems to have served chiefly as a check against phonetic writing. Recording by kymograph and recording by ear showed no serious discrepancies; the latter was infinitely simpler and more convenient for field work. Linguistic analysis did not proceed until after the kymograph record was reinterpreted into the corresponding phonetic writing. Today, however, it seems to be theoretically possible to engage in linguistic research directly from the spectrograms which the Bell Visible Speech machines supply, though actual application of this has not yet been attempted with American Indian languages.[2]

As a matter of fact everything considered up to this point is visible, representing either directions for speech (alphabetic writing), or reproductions of speech as by Scott's kymograph which transfers acoustic vibrations to a static record. This visible record is of side-to-side or lateral recording of waveforms.

The celebrated Edison phonograph built in 1877 also transferred acoustic vibrations to a rotating drum or cylinder covered with tinfoil: differences in pressure of vibrations were embossed up and down, hill-and-dale fashion, making a vertical recording of spiral shape on the cylinder. Wax replaced tinfoil on cylinder records; with disc records shellac was most commonly used, sometimes with lateral and sometimes with vertical sound track. Almost immediately this combined recording and playback machine was used in comparative musicology, as Herzog has shown. The archival value of the phonograph was appreciated from the first by Carl Stumpf and his assistant, von Hornbostel, later to become the leading musicologist of this generation.[3] Scholarly use of phonograph records in linguistics has been, by comparison, isolated and sporadic.[4] A few individual anthropologists, as Franz Boas, have started phonograph record archives of languages which they have studied, and some folklorists, notably at the Library of Congress, have been more comprehensive, but apparently no language archive is remotely comparable to such Archives of Folk and Primitive Music as that initiated by von Hornbostel in Berlin or as that recently set up by Herzog at Indiana. It remained for magnetic recording devices to stimulate comprehensive archives of American Indian languages which will preserve natural languages of the New World for future study.

The year after Edison built his first mechanical

[2] Potter, Ralph K., George A. Kopp, Harriet C. Green, *Visible speech*, N. Y., Van Nostrand, 1947.

[3] Herzog, George, Salish music, *in Indians of the urban northwest*, ed. Marian W. Smith, 93 ff., N. Y., Columbia Univ. Press, 1949.

[4] Disc recordings were used extensively in earlier stages of the American Dialect Atlas Survey; they are or were used for pedagogic purposes by correspondence schools and by the various armed forces and other training programs. At least one phonograph record, made by the RCA Victor Company, was formally "published" for research (Zellig Harris and C. F. Voegelin, Hidatsa, Water Buster Account, 1939), and seems actually to have stimulated a bit of research on the syllable (R. H. Stetson, An experimentalist's view of Hidatsa Phonology, *Internatl. Jour. Amer. Ling.* **12**: 136–138, 1946). Paul Fejos has pointed out to me that "published" phonograph records, to accompany books, were not unusual on the Continent between the two World Wars; a separate paper giving the details of this European publishing practice is needed to supplement the present paper.

recorder Oberlin Smith published a paper on the possibility of making permanent magnetic impressions for sound recording in which steel dust or clippings might be magnetized as they received undulatory current from a microphone. A Danish engineer, Poulsen, won the Grand Prize at the Paris Exposition of 1900 with a machine in which a recording head followed a wire which was magnetized as voice currents were generated by a microphone. In playing back what was recorded, better than phonograph fidelity was obtained, but it was necessary to use earphones. Phonographs had a higher playback level at this time; magnetic recorders could not compete with phonographs until electronic amplifiers were developed. It was first of all believed that records made by magnetic recording would be more permanent than those made by mechanical recording; hundreds of playings were expected without loss of quality. As later work was to show, hundreds of thousands of playings can be made on a magnetic recorder without loss of quality. The history of all this is given by Begun in a book summarizing the engineering aspects of magnetic recording, and including photographs and descriptions of magnetic recording equipment, as follows: [5]

WIRE RECORDERS. Telegraphone, Armour, Navy, Peirce, Silvertone, Majestic, Webster, Wi-Recorder, Magnetone, Railroad, Lear Dynaport, Nemeth Master, Magnecorder, Armour Master, and Isophone. Most of these are suitable for field work. When not, it is because the particular model is specialized for a single purpose, as in the case of the Isophone which answers a telephone when the subscriber is absent, records the message phoned in, and then plays back the message when a secret code utterance is fed into the machine.

STEEL TAPE RECORDERS. These are equipped with an endless tape. It is easy enough to erase a short utterance from such a tape, to make another brief recording, and to erase again. The endless tape, however, does not make a sufficiently long record for field work, nor can the endless tape be removed and stored and later played back again as can the other types of magnetic mediums.

COATED-DISC RECORDERS. Mail-A-Voice, for storing information on the most economical magnetic medium. This medium is in appearance not unlike a small phonograph record, but without guide grooves, and hence without the crosstalk which is sometimes noticeable in the smaller phonograph record making devices.

COATED TAPE RECORDERS. German Magnetophone, Tonschreiber, Rangertone, Ampex Magnetic, Armour Magnetic, Soundmirror models, [and Webster Electric Ekotape]. The portable models of these tape recorders are functionally equivalent (in field work) to portable models of the wire recorders listed above. A supply of spools of tape or wire, having a smaller diameter than phonograph discs, may be taken to the field with the machine of either type. Most such spools record and play back for either a half hour or a full hour. Utterances which have been sufficiently checked in the field may be erased from the spool or wire to give additional space for utterances to be preserved for later study.

Post-war magnetic recording does not provide noticeably greater fidelity than that which we associate with first class machines for making phonograph records. Whatever the reason, the significant fact is that the phonograph machines were rarely taken into the field. Instead, what recording was done was generally done by taking informants to university laboratories, as at the Linguistic Institutes, or to acoustic studios in nearby cities. Magnetic recorders, on the other hand, are commonly used in the field as the following survey will show.

As already observed in a previous report in this series, the now more than a dozen members of the Joint Committee on American Native Languages, teaching at a dozen different universities or institutes, constitute evidence of minimum instructional opportunities in a formerly neglected field.[6] Since these and other professors of the subject (and their students) virtually all utilize magnetic recording either in teaching or field research (or both), may we assume that this type of recording is now changing from a position of fashion and experimental trial to the position of an established adjunct in linguistic work? In seeking an answer to this question, we addressed a circular letter to members of the Joint Committee and to others engaged in teaching American Indian languages, requesting statements on experience with and criticism of magnetic recording.[7] Replies to our circular letter are summarized below.

[5] Begun, S. J., *Magnetic recording*, N. Y. and Toronto, Murray Hill Books, 1949.

[6] Voegelin, C. F., A decade of American Indian linguistics studies, *Proc. Amer. Philos. Soc.* **93**: 137–140, 1949; see fn. 4, p. 139 for references to reports preceding this one.

[7] We also requested information on American Indian and other unwritten language courses taught at the various

HARRY HOIJER, University of California, Los Angeles; Chairman of the Joint Committee: Magnetic recording of one hour of texts in Tewa, and phonetic data on various languages for use in phonetics classes; directing a graduate student to collect two hour spools in Tonkawa and a one hour spool in Kiowa-Apache; all recorded materials are in connected text; none studied or analyzed at time of writing; Department equipment includes Webster wire recorder, model 80-1.

PAUL L. GARVIN, University of Oklahoma: Experience in magnetic recording since the summer of 1947; most extensive experience with a non-American language (Ponape of Micronesia) in which 24 spools, each playing 45 minutes, were used to record connected texts, conversations, songs and feast noises; this was transcribed verbatim in the field together with explanatory notes from informants; subsequent experience was in recording texts and conversations in Wichita, transcribed verbatim with the help of informant; directing a graduate student in recording Cherokee; finds the use of two microphones useful for conversations; for obtaining verbatim transcriptions, small segments of tape or wire are played back to informant who is asked to repeat at dictation speed while the linguist writes phonetically and then rechecks later with the magnetic playback at conversational speed; informants are encouraged to criticize their own magnetic recording, saying, for example, that it is overly short—this forms the basis of a study of style differences between conversational and studied speech; Departmental equipment includes a Webster Ekotape magnetic recorder, which is taken into the field, and a Presto Y disc phonograph recorder which is left at the University—field recordings on tape are later dubbed on phonograph discs for storage.

ZELLIG S. HARRIS, University of Pennsylvania: Experience in inviting to the University speakers of many different languages, including Ottawa and Cherokee, and experimenting in a variety of recording devices and different types of analysis; rates tape, especially the plastic tape, above wire as a magnetic medium, and rates magnetic recording as superior to phonograph disc recording both in fidelity and, of course, continuity; rates the convenient small phonographs with plastic disc embossing recorders such as Soundscriber and Audograph as so low in fidelity as to be useful only for syntactic, intonational, and whole-text analysis in a language fairly well known to the investigator; concurrent transcription by linguist with even the best magnetic recording is strongly advised, unless the language is already well known to the linguist; Departmental equipment includes a Magnetape recorder, rated highest, and various makes of wire recorders, and disc phonograph machines.

MELVILLE JACOBS, University of Washington: Magnetic recording in field work delayed until the last week or even the last few days of each field trip; two or three short texts are then recorded plus a repetition of some material which has already been transcribed in writing; magnetic recording will serve as future test of accuracy of the written phonetic materials, and as a basis of study of sentence melody and various stylistic features; equipment for field trips undertaken in the years 1934 to 1939 included pregrooved RCA Victor disc blanks; the schedule was to fill four sides of such discs with material for each language investigated; magnetic recordings rated as indispensable for the minimal purpose mentioned, and advisable for other work concurrent with field analysis; recordings were made in Miluk Coos, Hanis Coos, Santiam Kalapuya, Molale, Galice Athabaskan, and other Indian languages of the Northwest, all of which are now either extinct or are spoken by only one or two remaining speakers.

FLOYD G. LOUNSBURY, Yale University: Magnetic recording of one spool (45 minutes) in Seneca, and phonograph disc recording of three hours in Cherokee, and a half hour in Cayuga; disc recordings dubbed on wire for frequent playing; difficulty found in picking up and placing down arm of phonograph in playing back to transcribe phonetically; repeated reversing and forwarding of wire in Webster recorder only slightly less awkward; engineering innovations made by Lounsbury on his Silvertone recorder to allow a few seconds of wire to play repeatedly for study somewhat after the fashion of the endless steel tape recorders; another difficulty relates to low fidelity which makes accurate phonetic transcriptions from any recorder impossible if the language is unfamiliar—the transcriber must know what to expect before he can transcribe consonants from machine recordings; chief use of recording, then, is that it allows field worker to bring back from the

universities and institutes, for the original plan of this paper was to include a summary of such information. The latter summary is not made here but instead will be part of a much larger study, Survey of Anthropology in American Universities and Colleges, by Erminie W. Voegelin, to appear in *Amer. Anthrop.* 52 (3), July 1950. Accordingly, I have turned over to the author of the larger report those parts of the replies which I received to my inquiries which bear on her subject.

field supplementary texts (told at natural speed without interruption) which may be repeated constantly:

If we had only a few more languages to document, I would not be worrying about higher fidelity recordings or about ways to facilitate the transcription of recordings. We could continue to do field work in the way that we have in the past and still finish the job. But the number of languages we have to document is prodigious. They are dying out unrecorded right here in the States, not to mention Mexico, Central and South America, Australia, New Guinea, etc. The recording and description of every one of these is as important to the science of linguistics as is natural history to the science of biology. When the "natural history" of language is fairly adequately written, I believe we can look forward to much more of a "science of general principles" in language than we now possess. I would like to see the development of a technique for collecting, with the aid of machines, enough material on a language in a very short time—a week or two—to suffice for a complete analysis of the language at a later date (or a later generation of linguists). I think that four or five hundred sentences of phonetically recorded text with fairly literal translations, supplemented by a larger collection of wire or disc recordings with free translations (which might also be recorded by machine), would be adequate. A tentative analysis of the manually recorded sample would furnish the key to aid in the transcription and analysis of the machine recordings.

NORMAN A. MCQUOWN, University of Chicago and Museo Nacional, Mexico: Experience in handling mechanical recordings made by the late Andrade in connection with his work on Maya dialects; rates linguistic materials recorded at random as utterly worthless for purposes of linguistic analysis; the only hope for salvaging such materials is for the linguist to return to them after he has made an analysis of his language via face to face work with informants, using predominantly the eliciting-response technique; mechanical recordings will then provide additional lexical materials; more than this, the mechanically recorded materials may serve to reveal otherwise unexpected problems, but to solve these problems it is necessary to work again with informants; mechanical recordings should also be made of materials which are elicited; the constancy of the playback is uniquely useful in working with intonation problems and for conserving linguistic materials which are pre-analyzed and pre-organized and accompanied by phonemic transcriptions and translations —what is wanted is a spoken grammar.

STANLEY NEWMAN, University of New Mexico: Magnetic recording of texts in Aztec and phonograph recording of a text in Keresan to be dubbed on wire; the latter is preferred for ease in repeated playback; limitation of magnetic recording is that it cannot be used effectively without recourse to informant to fill in the difficult-to-identify passages in the recording; directing the work of a student who is employed at an Indian School and has had opportunity to record on phonograph discs material from a dozen languages (Navaho, San Carlos Apache, Jemez, Laguna, Isleta, Oneida, Walapai, Zuni, Hopi, and others), putting a brief standard vocabulary on one side of the disc and a connected passage, using that vocabulary, on the other side.

KENNETH L. PIKE, University of Michigan and Summer Institute of Linguistics: Magnetic tape recording for analyzing and demonstrating Comanche and other languages (with aid of students); tape can be easily edited for purposes of demonstrations (selected passages on magnetized tape can be cut and pieced together with Scotch tape); playback from magnetic recording is most useful in teaching pitch discriminations in tone languages—least helpful in consonant discriminations.

JOHN H. ROWE, University of California, Berkeley: Experience in recording Guambiano conversation on phonograph discs under the direction of Henri Lehman of the Etnológico Nacional in Bogotá; played back in parts while the native speaker repeated his own text at dictation speed which was then transcribed; continuous playback used for study of intonation; notable differences observed between conversations and texts written at dictation speed; beginning work with magnetic recording on the assumption that all records made must be phonemicized with help of informant in the field.

MORRIS SWADESH, New York City: Magnetic recording of texts in Makah and in Nootka; greater difficulty in following playback of Makah than that of Nootka because Makah was the less familiar language; more difficult to transcribe from playback than from informant because the lip movements of a speaker may be watched and because a speaker may be asked to repeat more slowly; magnetic recording is fully adequate and indeed offers important advantages when one already knows the language—thus, the informant may be allowed to speak at any speed he wishes without interruption, for if the speed is faster than the linguist is able to transcribe, the utterances may be

later played back any number of times without danger of having changes made in subsequent repetitions; this is especially convenient when working with a new informant who can then immediately give texts without first being taught to talk at dictation speed; these advantages are offset by mechanical difficulties in playback of the Webster recorder which snarls wire and has an awkward start and stop mechanism.

GEORGE L. TRAGER, Foreign Service Institute, Department of State: Experience with magnetic recording in New World languages in Oklahoma and with Old World Languages in the Foreign Service Institute, as well as some experience with disc phonograph recorders; magnetic recording is preferred for its higher fidelity, and tape above wire recorders; but low fidelity disc phonograph recorders are easier to operate; Departmental equipment includes magnetic tape recorders (Brush Sound-Mirrors), magnetic disc recorders, and phonograph disc recorders (Soundscribers).

C. F. VOEGELIN, Indiana University: Magnetic recording used in connection with two problems—distinguishing between major and minor sentence types in Turkish (with an endless steel tape recorder), and subsequently in experimenting with text translations in Ojibwa (with a wire recorder); two microphones were used in the experiment, one by the informant who narrated, the other by the investigator who whispered successive numbers (1, 2, 3, 4, 5 . . .) at every slightest pause in the narration; the informant was not aware that the investigator was inserting numbers at junctures in the narration; in playing back, the narration was halted when the first amplified number was heard, and the informant was asked to translate up to that point; then successive segments between 1 and 2, between 2 and 3, between 3 and 4, and so on, were played back with the informant translating each time the playback was halted; these translations were written down in English (had a second recorder been available it would have been possible to record English translations together with ancillary notes contributed by the informant); later, at the University, a graduate student, Riggs, transcribed the Ojibwa texts and inserted the English translation under her transcription of Ojibwa; after the academic year Riggs had a brief field trip to check, face to face with informant, her transcription from magnetic recording made in the first instance without knowing what to expect; the informant was able to understand when Riggs read her own transcription from a fifty-page typed manuscript, and the informant was able to fill in on gaps in the translation; phrase boundaries and phrase translations were obtained by this method; other graduate students, Salzmann and Croft, worked concurrently with wire recorders and with informants in Arapaho and Cheyenne, respectively; they made recordings to illustrate prosodic problems for later study; for study in the field they prepared morpheme lists and paradigm sets, first written in transcription from informants, and then recorded these on wire, partly in isolation and partly in utterances—in this way they obtained data on word boundaries which were not obtainable by the method used with Ojibwa; Departmental equipment includes an Ekotape recorder, a Peirce wire recorder (with foot pedal for playback and with an electronic mixer for employing as many as four microphones in one recording), and a privately built Mark Potter disc phonograph recorder and playback for laboratory use; additional wire recorders were obtained for field work through the generosity of the Viking Fund.

Research activities in American native languages which have been carried out with the aid of grants from the Phillips Library and Penrose Funds of the American Philosophical Society have, without exception, had the benefit of magnetic recording. Annual reports of these activities, dated 1945 to 1949, have been given by Zellig S. Harris, Harry Miller Lydenberg, Alfred V. Kidder, and C. F. Voegelin.[8]

On November 24, 1948, the National Museum of Mexico inaugurated the Viking Laboratory, a sound-proof room equipped with 5 Webster, 2 Peirce, and 3 St. George wire recorders; and a variety of disc phonograph recorders; and an oscillograph and radio sending and receiving equipment. Linguistic materials thus far recorded include texts in Nahuatl, Tarascan, Chakchiquel, Tlapanec, and Totonac; all this together with songs in Cora, Huichol, Seri, Tarahumara, Yaqui, Tzeltal, Tzotzil, Tarascan, Nahuatl, and Araucanian obviously forms the basis of a possible language archive, perhaps modeled after the Lautarchiv in the Prussian State Library, Berlin, or after the Archives de la Parole in the University of Paris.[9]

[8] *Loc. cit.*, fn. 6.

[9] I am indebted to my colleague, George Herzog, for references to the European language archives cited, apparently the only archives devoted to conserving records of many living languages.

THE HISTORY AND PRESENT STATUS OF PENNSYLVANIA ARCHEOLOGY*

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INTEREST in our Indians and in the relics of earlier cultures began with the earliest settlement of the Atlantic seaboard, but only recently have any techniques for the study of prehistory been recognized in this area. Throughout the eastern United States one particular type of archeological interpretation has held sway from Colonial times until the present, as the usual folk interpretation and as the older scholar's procedure. According to this view, the most conspicuous archeological site in an area was identified as the location of a historic Indian town, and other sites as camps and trailside bivouacs of the same community. By this line of reasoning, all artifact types found on the soil of a county were ascribed to one people and culture, and problems of chronology and culture change were dismissed as irrevelant. Such was the scholar's approach to any portion of the East in 1880, and such is the layman's interpretation in most sectors today. At the present time, students of the prehistory of New York State have advanced furthest from this anti-historical point of view, while our knowledge of Pennsylvania, like that of Virginia, Delaware, Maryland, and New Jersey, is in the pioneering stage and has only in the past decade begun to produce meaningful hypotheses.

The revolution from the antiquarian's collecting of Indian relics to the student's unraveling of prehistory in the East took place in New York State about 1880. William Beauchamp, an amateur historian and collector of Indian relics, apparently was the first to notice that certain very conspicuous sites in the area of historic Cayuga occupation were characterized by a relatively few types of artifacts. The triangular arrowpoints and distinctive pottery of these sites were sometimes associated with brass and iron artifacts and other objects of European manufacture. Beauchamp concluded that sites of this type represented the Cayuga occupation of the area, and that sites of other types should be ascribed to earlier cultures. At about the same time, and apparently independent of Beauchamp's work, Percey Van Epps identified historic Mohawk sites and drew similar conclusions.

Both Beauchamp and Van Epps drew up the first tentative cultural inventories for local cultures of the early historic and late prehistoric periods, and thus made it possible for later students to set up historical sequences of earlier culture types. They both studied historical sources and assigned names and dates to sites from data in the Jesuit and Colonial records. This constituted almost the first site documentation in the East, and, although these historical identifications of town sites are still widely accepted, they are extremely uncertain and rest on rather slight evidence. These pioneer students had discovered historical cultures, but, as is usually the case, their specific site identifications are unsatisfactory; their contribution was to archeology rather than to history. Beauchamp extended his studies to the Seneca and Onondaga areas, and set up a definition of Iroquoian culture which he generalized from the specific cultures. Later students concentrated on the earlier periods in New York prehistory which Beauchamp had revealed, with little attention to the later Iroquoian periods. Thus our knowledge of the late periods in New York has been little refined since Beauchamp's time, despite large scale, uncontrolled digging for relics on historic and prehistoric Iroquois sites.

Beauchamp and his student, Arthur Parker, popularized a definition of Iroquois culture which is well known to every collector and to many laymen. This set of conclusions has served, not as impetus to further knowledge of Iroquoian culture, but, instead, as a solution to all problems and has, to some extent, obscured studies of northeastern prehistory. The most conspicuous diagnostics in this definition of Iroquois would have fitted historic Creek, Cherokee, Delaware, or Pawnee as well, and in fact represented the "index fossils" of a time period rather than a culture or tribe. However, broader pictures did not emerge until a very recent time. With our present knowledge of late cultures in areas outside of New York, many

* Research was carried out with the aid of a grant from the Phillips Library Fund of the American Philosophical Society.

of us are turning back to this pioneer area with new problems and theories, and see the Five Nations' cultures as a new frontier in the archeology of North America, rather than as a set of long-solved theses. On the other hand, studies of earlier horizons have been most fruitful in New York, and were made possible only by the recognition of late periods and the consistent application of concepts of chronology and culture change. In terms of an overall picture, other states continue to lag far behind and are only beginning to apply the principles of a science to their own prehistory.

New York's leading role in archeology has not been the result of accident, but is merely one phase of its central role in American natural science in the nineteenth century. Prior to 1850 New York geology stood at the apex of American science. Local circles of scholars at Albany and Troy began the tradition of scientific discipline and of critical study of natural phenomena which led to the founding of the Geological Survey in 1836. This survey was the father of numerous progeny in other sciences, all surviving as continuous activity in a number of sciences, uninterrupted by the death of individual scholars or changes in political control. The Geological and Natural History Survey was supplemented by the founding of the Cabinet of Natural History in 1848, which became the State Museum in 1871. Archeology and ethnology were included in the field of the State Survey from its beginnings, and collections started. Henry Rowe Schoolcraft was hired to conduct an Indian Census in 1841, and his report includes the first attempt to identify historic Seneca sites from Indian tradition and the artifacts found on them. Lewis Henry Morgan collected for the Cabinet, and Beauchamp became the State Archeologist following his first productive research period in Iroquois archeology. Amateurs and other institutions, influenced by the state's initiative, have participated in this program, and thus our present picture of New York prehistory is the result of unbroken activity by a community of students for over a century, with a central, stabilized state program of studies in the natural sciences at its core.

Philadelphia's role as a scientific center in the early period was more important than Albany's, and was of national scope. Thus, while the American Philosophical Society, the Academy of Natural Sciences of Philadelphia, and other institutions were the pioneers in American botany, zoology, and geology, no institution took as its specific field the local geology and natural science of Pennsylvania. However, their contributions to the growth of natural science leading directly to local archeology took two forms. The American Philosophical Society has always included in its membership a large proportion of the leading students of American anthropology, and particularly in the pioneering period their contributions shaped a developing science. Clark Wissler has fully chronicled the growth of American anthropology from this point of view, and a whole field, of which northeastern archeology is but one fragment and technique, grew from the efforts of early Philadelphia scholars.[1]

The founding of the Academy of Natural Sciences in 1812 led to more intensive work in American geology. William Maclure's pioneering work is near the fountainhead of American geology, and began the strong local tradition of geological research, unfortunately no longer so conspicuous in Philadelphia today. Almost entirely through the efforts of these Philadelphia societies, the First Pennsylvania Geological Survey was founded, less than two weeks after the New York Survey. Prior to this time, the local geology was a field for individual scholars, but now work on a much larger scale was possible. However, whereas in New York the Geological Survey has continued without lapse down to the present time, and has carried along with it the State Museum and many allied sciences, including archeology, the Pennsylvania surveys were discontinuous and have acquired no brethren research organizations. The present survey is Pennsylvania's fourth. No provisions have ever been made for the permanent storage of study collections, and adequate research facilities are still needed for official geology in Pennsylvania. Thus it is not surprising that Pennsylvania archeology has only recently become the official concern of any institution, and that the prehistory of the state remains so completely in shadow.

Several early incidents in the study of the state's prehistory are extremely informative. In the late 1870's, a local collector of Indian relics, minerals, and plants, John A. Ruth of Easton, Pennsylvania, had become familiar enough with the sites on the middle Delaware, from the Water Gap to Trenton, that he began to notice major site differences. Five of his sites produced only small triangular arrowpoints, and distinctive pottery, of fine paste,

[1] Wissler, Clark, The American Philosophical Society and the American Indian, *Proc. Amer. Philos. Soc.* **86**: 189–204, 1942.

with incised designs. These sites lacked practically all of the relic types found on other sites nearby. He was extremely puzzled by this situation, and could get no satisfactory explanation. He acquired some Mohawk sherds from Canajoharie, New York, by exchange, and noted resemblances between this and his Delaware material. Beauchamp, in a letter of 1881 told Ruth that the same traits characterized his Cayuga sites, but that he could not explain the resemblances. Henry Mercer said that the sites represented Shawnee settlements, and other authorities had other explanations, none of which satisfied Ruth, who apparently never came to any conclusion. Of course, Ruth had found pure sites of the late periods of Delaware occupation, probably including several historic ones, and a Munsee site of the same period. The discovery which could have been the key to the prehistory of the Delaware Valley was ignored in Ruth's time, and went unnoticed until a couple of years ago, when it served as the basis for excavation of pure Delaware components of the last period and led to the first tentative definition of Delaware culture at the time of European contact.

Henry Mercer was one of the pioneers in the archeology of the Delaware Valley. Like C. C. Abbott of Trenton, New Jersey, he had a good knowledge of European archeology and was one of the most promising students of the Northeast. Mercer came to oppose Abbott's identification of a Paleolithic horizon in the Delaware Valley gravels, and was one of the earlier students to suggest that culture had been static in this area. Mercer apparently excavated in one of Ruth's sites at Lower Black's Eddy, Pennsylvania. According to his accounts, two village layers were separated by several feet of sterile sand; they contained identical pottery, but chipped stone tools of distinct lithic materials. Mercer's accounts are vague and self-contradictory, and I have not been able to locate any notes or specimens of his which might pertain to the site. Mercer's interest in the local archeology was entirely personal; his notes and specimens are not preserved intact; he early lost interest in archeological problems, and his efforts were not continued by later students. Such sporadic and non-continuous studies in Pennsylvania archeology belonged to a tradition distinct from that of New York natural scientists.

Amateur collector interest in Pennsylvania Indian relics and the suggestions of scientific value in such early studies as those of Mercer, Abbott, S. S. Haldeman, and Edwin Atlee Barber, apparently aroused enthusiasm for a full scale program in archeology. The first archeological survey of the Delaware and Susquehanna Valleys must have been attempted sometime in the late 1880's. I know almost nothing about it, except for what information is included on the illustrated broadsheet, which was apparently printed for distribution as a questionnaire in several editions (fig. 1).

The second survey, of 1924, had its roots much earlier in the activities of local students. Christopher Wren, of Wilkesbarre, was one of the early students of the upper Susquehanna and his collecting and data-gathering activities were continued by the Wyoming Valley Historical and Geological Society down to the present time. In the early 1920's Arthur Parker's conferences with the Society's officials, and especially with Miss Frances Dorrance, led to a site survey project as the first step in an attempt to begin adequate studies in the long neglected field of Pennsylvania prehistory. This survey was begun by the Wyoming County Society in 1924, and questionnaires distributed requesting information from the Delaware and Susquehanna drainage areas.[2] The success of the first venture led the Pennsylvania Historical Commission to take over the survey and extend it to the western portion of the state, under Miss Dorrance's direction. This survey branched into other archeological and ethnological projects of the Commission, and continues to the present as a less formal and more personal-contact type of site survey system.

The Pennsylvania State Museum, founded in 1905, collected and exhibited Indian relics, and until recent years functioned largely as a division of the Department of Public Instruction, as "a museum for the preservation of objects illustrating the flora and fauna of the State, and its mineralogy, geology, archeology, arts, and industry." Gradually, the museum came more to emphasize histori-

[2] A printed questionnaire which was distributed during the second archeological survey of Delaware and Susquehanna valleys, 1924–1926, contained the following questions: 1. Have you personally found any Indian relics, arrowheads, flints, pottery, etc.? If so, where? 2. Give, if possible, the exact location—township, lot number, name of farm and owner—where any of the following named Indian remains are supposed to occur; (*a*) Forts, (*b*) Village Sites, (*c*) Burial Grounds, (*d*) Camp Sites, (*e*) Indian Trails. 3. Where have relics been found in any quantity? 4. Where has pottery been found? 5. Where have Indian graves been found? 6. Give the address of any persons in your county having large or small collections of Indian relics.

Circular Relating to a Proposed Archæological Map.

DEAR SIR:

The Numismatic and Antiquarian Society of Philadelphia has undertaken the preparation of an Archæological Map to embrace the valleys of the Delaware and Susquehanna rivers, and desires your co-operation in this important work.

The Map is intended to show the location of all the principal remains attributed to the Indian tribes who formerly occupied these regions. It will include contiguous portions of the States of Pennsylvania. New York, New Jersey, Delaware and Maryland.

Societies and individuals are earnestly requested to furnish whatever *information* they may possess concerning the following classes of antiquities:

1. Gravel deposits (Palæolithic)
2. Artificial shell-heaps.
3. Cave-retreats.
4. Encampments or village sites.
5. Earth-works.
6. Old-fields.
7. Quarries.
8. Workshops.
9. Surface deposits of implements, or *caches*.
10. Large rocks in place, used as mortars.
11. Rock inscriptions (*in situ*).
12. Burial places.
13. Tumuli or mounds.
14. Indian trails.

A full description and accurate location of any of the above should be given. How far and in what direction from nearest town? On or near what stream, if any? On whose property? The occurrence of native objects of *copper*, or articles of European introduction, should be mentioned.

Names and addresses of persons who possess collections of relics, or who are interested in archæology or local history, also the titles of local Scientific Societies, with the addresses of their respective secretaries, will be thankfully received.

Respectfully, yours,

EDWIN A. BARBER,
JOHN R. BAKER,
HENRY PHILLIPS, JR.,
FRANCIS JORDAN, JR.,
STEWART CULIN,
DANIEL G. BRINTON, M. D., *ex officio.*
Committee.

Communications may be addressed to Henry Phillips, Jr., Secretary, Philadelphia.

Second Edition—1000.

FIG. 1. Printed broadsheet questionnaire distributed in the first archeological survey in the Delaware and Susquehanna valley about 1890.

cal studies, and, after 1920, the Curator was responsible for general collections, and the Antiquarian took charge of antiques and Indian relics. Although the Museum participated in the Susquehanna River Expedition of 1916, it did not undertake archeological research. The Historical Commission concerned itself with archeological problems following 1926, but not primarily with collections. In 1931 Donald A. Cadzow was appointed State Anthropologist, thus giving archeological research an official, permanent status in Pennsylvania for the first time.

The Commission's duties were originally defined to include responsibility for archeological studies within the state, while collections were to be turned over to the State Museum. Thus the State Anthropologist and his staff were in one administrative unit, while the collections were in another, and this dichotomy presented many difficulties. The largest backlog of Pennsylvania material available was buried in the Museum without enough staff to process it and make it accessible, and the two divisions involved duplication and waste of funds. Since these two functions have now been consolidated, and since housecleaning and processing collections have proceeded far enough to promise the future availability of data and the construction of a program, the Pennsylvania Historical and Museum Commission is now finally in a position to attempt long-range projects in Pennsylvania archeology. We also hope and trust that there is present the stability necessary to carry on research properly, so that tasks undertaken can be carried through to completion and publication and so that a staff can be kept in enough security and freedom from outside domination to do adequate and constructive work.

The Carnegie Museum of Pittsburgh is also returning to a field of earlier interest and is becoming increasingly active in the archeology of western Pennsylvania. It is hoped that, in years to come, Carnegie may undertake intensive work in the Ohio drainage area, thus taking as its field one distinct major natural and cultural area in Pennsylvania, while the Pennsylvania Historical and Museum Commission may continue and intensify its present work in the area of the Delaware and Susquehanna drainages. I feel that this pattern of revived interest in areas and problems near home is a very healthy symptom in the present development of research institutions. It recognizes the universal applicability of a science, and the equal value of data and conclusions drawn from nearby fields, while minimizing somewhat the romantic attraction of the far way and exotic.

The American Philosophical Society has recently intensified its interest in the anthropology of the Northeast, and has in particular in the past decade supported primary research on linguistic and ethnological problems in the area. Present cooperation of the American Philosophical Society with the Pennsylvania Historical Commission and other Pennsylvania institutions has been especially productive in the fields of ethnology and ethnohistory. While supporting archeological research in adjacent areas, the society has also contributed to the support of research and excavation in Pennsylvania, and has been a valuable ally in many other ways to those working in the field.

In one recent instance, the American Philosophical Society has provided haven for a series of manuscripts, notes and reports, and photographic negatives on Pennsylvania archeology, which originated in the Pennsylvania Historical and Museum Commission's files but which have passed out of custody during the past ten years, and were in serious danger of loss. Also included in the lot are copies of reports from other sources and a few notes from local collectors. Many of these reports are records of Works Progress Administration Archeological Projects in Pennsylvania, but more than half represent activities of the State Commission rather than WPA reports. The bulk of the material is not publishable in its present form, but can be put into final shape by students in cooperation with the Pennsylvania Historical and Museum Commission and the addition of data available in the Commission's files and collections. This manuscript represents major source material, and all interested in Pennsylvania archeology should be very thankful for its safe custody in the American Philosophical Society Archives, where it can be protected both from destruction and premature publication.

The recent emphasis of the Society's interest in the anthropology of the northeastern area makes available to students in the area certain facilities not readily available elsewhere. Particularly important is the role of the Society as an archive for anthropological manuscript. Here the student can deposit almost any type of report or set of field notes, whether unique or a copy, and be certain that they may be secure, properly processed, and available to other scholars, while yet under any necessary restrictions. A unique manuscript is data in danger of loss and destruction, and thus I

should like to recommend my own policy of placing duplicate copies of catalogs, notes, drawings, and photographs with the American Philosophical Society, as a sort of fire insurance, if for no other reason. Particularly I should like to see the notes and data of non-professionals and smaller institutions safeguarded in this way.

Archeology has come to be, as have other sciences, a vast cooperative adventure in which progress is the result of the work of a community of professionals and amateurs, rather than the product of any individual. The sketch of our present knowledge of Pennsylvania archeology which follows is drawn from many sources and many individuals have contributed to it; it seems scant enough, but we hope it is the beginning of a large scale picture which will be developed by the effects of several institutions and innumerable individuals.

At the present time eastern Pennsylvania is better known than the western part of the state, and the latest periods are generally better known than earlier epochs. The historic cultures of the Susquehanna are better known than any other segment in the archeology of the state. Although definitive analyses of Susquehannock culture are not yet published, past and current work in Lancaster county offers a good picture of the Conestoga period, in which native material culture was decadent, and of the preceding Schultz Site period, which represents the apex in Susquehannock population and power during the 1620–1660 period. Sites which could be ancestral to Susquehannock of this period are found, not on the lower Susquehanna, but in the upper river, from Sunbury to Elmira. Here Andaste-Susquehannock sites of the earliest historic period are preceded by closely related prehistoric sites, and these by earlier Iroquoian horizons, which follow after an Owasco sequence.

We do not fully understand the political-military factors of the early seventeenth century which pushed the Susquehannock down the Susquehanna into a new territory, but there seems little doubt that this is one effect of the formation and arming of the Iroquois confederacy. A major problem of this area is the relationship between Iroquois and Owasco, for several horizons of each are apparently only stages in a local evolutionary sequence. This is one of three areas in Pennsylvania in which the classical "Iroquois problem" is of major importance; "Where did the Iroquois come from, and when did they enter the Northeast?" Field work in Bradford County in 1948 was orientated about this problem, and this portion of Pennsylvania is one area in which current theories about the Iroquois problem can be tested.

Susquehannock entry into the lower Susquehanna apparently wiped out a number of communities of peoples indigenous in that area, and for which we have nothing but archeological data. This Shenk's Ferry culture appears as a conspicuous late prehistoric complex from the Juniata to the Maryland border, and a distinctive phase of it is associated with a few European objects and Susquehannock sherds. We have no hint as to the linguistic and political relationships of the people, who apparently disappeared before any Europeans had penetrated into this territory. The Shenk's Ferry culture is not related to those in immediately adjacent areas, and its apparent relationships which are vague, are to the Fuert Focus of Ohio, the Gala Site in West Virginia, and Tutelo of Virginia. However, we need more information before we can speculate on the origins and history of this culture, which represents an "island" in the Northeast.

Owasco and Shenk's Ferry appear to follow the Clempson's Island complex, which I think is the earliest Owasco period in the Susquehanna. The relationships of this complex to Owasco and to the earlier history of the valley are primary problems about which we know very little. Earlier horizons in the Susquehanna are postulated but known only through surface collections. Thus our demonstrable picture of this area extends back in time only to A.D. 1000 or later, and the great bulk of the Indian history of the valley belongs in earlier and scarcely known periods.

In the Delaware Valley several horizons are recognized for both Munsee and Delaware in late prehistoric times although the historic sites are not known with certainty. Munsee is known last as one focus of the Iroquois Aspect, and Owasco stages, which are considered ancestral, precede it. This evolutionary sequence needs further study and interpretation, with particular emphasis on correlations and cross-ties with the Susquehanna, Hudson, and Mohawk drainage sequences. Several stages are also known in the Delaware sequence further south, and these show little relationship to the Munsee material. The Delaware picture is drawn from scant data, and needs extensive field work, orientated toward tracing Delaware back to their earliest recognizable stage in the Delaware Valley, and then attempting the difficult problem of Delaware origins. Again in

the Delaware drainage area in Pennsylvania, earlier cultures are only postulated and present information, carried back in time from the historic period, is but a tiny scrap of the whole fragment. New Jersey's work on the Delaware Valley provides us with considerable data from earlier sites, but the picture is far from finished. Present knowledge of late horizons should be extended back in time, and the temporal relationships between earlier excavated sites are still to be worked out.

One important feature of late period sites in Pennsylvania, as well as adjacent sections, is the occurrence of trade sherds in many sites. These occasional stray fragments of pottery, when found in context, permit cross-ties between different cultures and areas and make it possible to demonstrate contemporaneity between different sites and different cultures. Delaware artifacts have not yet been found in definite associations with European materials in Pennsylvania but they are found with Susquehannock sherds of a type known only from historic sites on the Susquehanna. Recognition and proper interpretation of such ceramic material will integrate studies throughout the Northeast and make possible sweeping areal interpretations.

Historic components are so far unknown in western Pennsylvania, with the exception of the extreme Northwest. Late cultures of this area have not been identified with any historic, political or linguistic groups, and the reasons for disappearance of these cultures are unknown. Described sites obviously contain several components which have not been separated, and relative chronology within the late western Pennsylvania cultures is not even suggested. Here Early and Middle Woodland horizons are better understood. This whole region contrasts with the eastern part of the state so far as culture elements are known, and belongs, both physiographically and culturally, with the Ohio region. It is still hoped that crossties may be found between this section and the Susquehanna, but trade sherds between these regions have not yet been found.

Thus our present picture of Pennsylvania archeology shows two different aspects; one is the direct historical picture, working back from the historically known into the prehistoric. Where this procedure has been started in the eastern part of the state, only a tiny segment of the total history is known. From another point of view all of the known material is organized into a partly intuitive, partly demonstrated scheme covering the total surmised occupation, and this is tested, bit by bit, in the field, without trying to carry a continuous sequence back from the historic present. Present and future work in Pennsylvania should use both techniques to their utmost, as complementary approaches to a set of problems which looked very simple ten years ago, but which now seem of unbelievable complexity.

THE ELSIE CLEWS PARSONS COLLECTION

GLADYS A. REICHARD

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In May 1949 the Elsie Clews Parsons Collection of notebooks and unfinished manuscripts was presented to the American Philosophical Society by Mrs. Parsons' children, Mrs. Elsie Parsons Kennedy, Mr. John D. Parsons, Dr. Herbert Parsons, and Mr. Henry McIlvaine Parsons.

As a student at Barnard College, from which she was graduated in 1896, Elsie Parsons came under the influence of the late Franklin H. Giddings. As a result of her further study of sociology, she became much impressed with the importance of tradition in human culture. Her books, *Religious Chastity, The Old-Fashioned Woman,* and *Fear and Conventionality,* are representative not only of her views of the force of social ideals, but also of the general change in social thinking characteristic of the times.

About 1915 an interest in Southwest Indians led to Dr. Parsons' acquaintance with anthropology in which she thenceforth specialized under the tutelage of the late P. E. Goddard, Franz Boas, and A. A. Goldenweiser. It was the heyday of the so-called "Boas school," and she worked with others of the period—A. L. Kroeber, R. H. Lowie, and A. M. Tozzer, to mention only a few. She laid out for herself field projects of vast scope and patiently worked them out.

After contributing many papers and monographs on the religion of the Indians of the Southwest, she gathered the information made available through her and her predecessors into the classic *Pueblo Indian Religion.* In *Mitla, Town of the Souls* she drew together many details from archeology, ancient and modern Spanish sources with her own fieldwork in contemporary acculturation.

A cruise among the isles of the West Indies, and much additional work in historical and folkloristic sources yielded the volumes on *Folklore of the Antilles.* Dr. Parsons' last field trip, completed only a month before her death in 1941, was for the purpose of checking information on the Peguche of the highlands of Ecuador, the results of which have since been published under the title *Peauche, A Study of Andean Indians* (1945).

The unfinished business in the collection presented to the American Philosophical Society is explained by Dr. Parsons' varied interests, by her ability to formulate problems and to visualize in the opportunities which came her way the needs of anthropology as a growing science. She did not simply dabble with such circumstances as a matter of mere entertainment, but followed them through, scenting out their ever widening significance and relationships. A person with such intuitions and such vision must always leave works uncompleted.

Fig. 1. The hunt chief builds a ceremonial fire. Native painting of the Isleta Indians.

The collection is valuable and interesting from several points of view. Three major works have had a great deal of attention but remain unfinished. A large collection of paintings from Isleta by a native of the pueblo is unique in that the paintings depict scenes from daily life. They are done in the style which has become famous in the Southwest under the influence of the Santa Fe artists, but contrast with the more modern paintings in being quite unaffected.

The pueblo artists rarely choose subjects from their home pueblos, but tend to paint scenes, often ceremonial, of their neighbors. The effect, either intentional or unconscious, sometimes seems to be of caricature. The Isleta collection is naïve and revealing in concept and execution. It is hoped

that this collection will be published in the near future—editing and publication funds are the prime requirements.

A second work, not yet ready for publication, is a large collection of prayersticks with accompanying information. It is in the form of notes and illustrations and will require a vast amount of

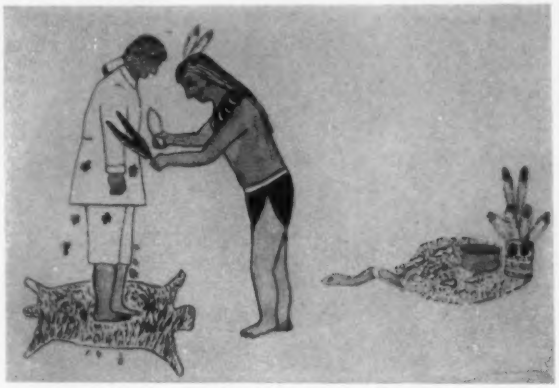

FIG. 2. Curing for disease caused by ants. Native painting of the Isleta Indians.

organization, as well as subsequent writing and preparation of the manuscript. It should be done by someone who already has a grasp of Southwest religious and cultural problems, since the work is primarily comparative.

Dr. Parsons' collection of folklore from the Antilles is justifiably famous. She published two volumes, *Folk-Lore of the Antilles, French and English* as *Memoirs of the American Folk-Lore Society* XXV, Part I (1933) and Part II (1936), and a third volume of the same *Memoir* appeared posthumously in 1943. The first two parts present the materials, the third consists of summaries and comparison of the tales with bibliographical references. Dr. Parsons planned a fourth volume to contain Verse, Folk Beliefs, Linguistic Notes and Glossary of Dialectic Terms in French and English, and a discussion of Provenience and Distribution. This fourth volume remains to be done—the materials are among those deposited. Today it would be impossible to obtain a collection of folklore such as this, but it may be possible to get informants to aid with the work of the Glossary.

Besides the original notebooks on which Dr. Parsons' impressive published works are based, there are some on miscellaneous subjects. Dr. Parsons held the theory that many isolated details, obtainable but perhaps not comprehended at the time of collection, should be preserved until a time when "someone would know more and be abie to interpret them." Her theory was proved correct many times during her lifetime. These notes may also furnish interesting materials for a biography, to which some correspondence in the files would also contribute.

When Dr. Parsons' estate was settled her children generously allowed me to choose any books I wanted from her extensive anthropological library. Since we both worked on the Southwest, there were naturally a large number which I already had. I knew, however, that Dr. Parsons' method of annotating was to mark her books and to make cogent remarks in the margins. Moreover, she summarized her criticism of the book and often made comparative notes on the end papers or on sheets of paper clipped to the pages. Many of these notes are invaluable, and these books form a part of the collection.